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Canadian News Print Mills Ask Wage Revision

Manufacturers Request Partial Revision of Wage Scale, Elimination of Boss Machine Tenders, Reduction in Beater Engineers Pay and Lower Minimum for Fourth and Fifth Hands—Also Take Stand for Reduction of 10 Per Cent In Wages Paid Generally In Industry—Paper Makers Favor Inreased Prices for News Print

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., March 22, 1930.—News print manufacturers representing a majority of Canadian tonnage appeared at last week's conference of representatives of locals in the International Brotherhood of Paper makers at Montreal and requested not only a partial revision of the wage scale, the elimination of boss machine tenders, a reduction in the pay of beater engineers, and a lower minimum for fourth and fifth hands, but also took the stand for a general reduction of ten per cent in wages paid generally in the industry.

Action Is Big Surprise

This action on the part of news print manufacturers came like a bomb shell and the statement was made here by officers of the union that any attempt on the part of the manufacturers to reduce wages from May 1 on will be fought to the last ditch. In the face of this action on the part of news print manufacturers the union is not asking for any increased wage scale this spring, despite the fact that a considerable number of resolutions from locals were received, some of which wanted a five-day-week together with a twenty per cent increase in wages. The Montreal conference was the best attended in several years, it was announced.

More Conferences Planned

Returning to their offices in this city officials of the International are now planning for conferences to be held from April on with manufacturers throughout this country and Canada. While it was said here today that there is no indication that there will be a general reopening of wage and working agreements between the unions and the manufacturers this spring it was added that comparitively few of the present agreements carry a continuation clause which will make it necessary for both sides to meet and sign agreements from May 1 on, even though there are no new developments.

New Officers Elected

At the meeting of the executive board, also held at Montreal, a sixth vice president in the person of James P. Nicols, of Thorold, was named to take the place of A. F. McLeod, who was unseated as the result of a committee's report on alleged election irregularities in several Canadian mill towns. Arthur D'Aoust, of Hull, P. Q., was chosen to have charge of the organization work throughout Quebec with headquarters at Three Rivers. He takes the place of Mr. McLeod. The executive board was in sssion in Montreal two days before the general conference and likewise two days following the meeting. At the general confernce a resolution in favor of the five-day-week was adopted and plans perfected to bring this about by eliminating the last shift on Saturday night.

Pulp Mill Workers Wages

The pulp workers, who also met in Montreal, went on record in favor of a 45 cent instead of a 40 cent minimum wage for common labor despite the fact that a higher price is now paid in a number of mills but is not general throughout the industry. News print manufacturers did not put up any proposition for a reduced wage for pulp workers.

The International organization also went on record in favor of an increase in the price of news print and a resolution to that effect was submitted and approved by the joint conference. It was said here today that a program is being mapped out to bring about this increase.

To Build Boiler House at Gatineau Mill

[FROM OUR REGULAR CORRESPONDENT]

The Canadian International Paper Company has begun the construction of a boiler plant at its news print paper mill at Gatineau, Quebec. The plant will cost one million dollars and will be built to house five Kidwell boilers, of which four, with an aggregate capacity of 5,200 boiler horsepower, will be installed at this time.

Plans for the boiler house were prepared by the engineering forces of the company in conjunction with the mill staff, and the boilers are being manufactured by Canadian Vickers, Limited. The boiler house will be completed and ready for operation October 1 when electric energy now being delivered by Gatineau Power Company for the generation of steam at the mill will be released for delivery to the Hydro-Electric Power Commission of Ontario under its contracts with Gatineau Power Company.

This month marks the third anniversary of the starting of Gatineau mill, an all-electric paper mill. On March 31, 1927, the sulphite mill began production, followed by the ground wood mill five days later. The first machine began making paper for shipment April 14 and the last of the four installed in the mill was producing news print by August 19 of that year.

Pulp and Paper Price Index for February

WASHINGTON, D. C., March 26, 1930.—Wholesale price index number for February for the paper and pulp industry was 87 compared with 87.3 for January and 87.8 for February of last year taking 1916 at 100 according to the Department of Commerce.

Philadelphia Paper Market Shows Improvement

Slight Reductions On Many Standard Grades of Paper, Recently Announced, Promote Greater Purchasing at More Attractive Prices—Manufacturers of Building Papers Operating On Full Time Schedule In Preparation of Seasonal Increased Demand

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 24, 1930.—Although there is lacking the volume of business which usually is in vogue at this season there nevertheless is a much improved paper market, which creates confidence on the part of the dealers in the near future and its prospects of broadening activity. Just a few weeks back the trade was confronted with higher prices of many lines of paper normally active at this time but there has been a slight reduction in those standard grades which has promoted buying. Krafts have been among the active products of the paper market as the dealers turn to the buying side with inducements that are attractive for present conditions and for the "long pull" of the Summer and Fall when business will no doubt be on the upward grade.

Paper bags have been reduced ten per cent within the month and like other products reduced recently are more active.. The lower prices of kraft, too, have affected the bag market. Cellophane bags continue steady and are among the profitable lines of the converting industry as patented rights protect manufacturers and the growing use of cellaphane opens up newer distribution and adds to industries that turn to this visible trade product for coverings. Another group of trade products just now enjoying a more active market are building papers. As warmer weather nears dealers begin stocking and manufacturers are on full time schedule. Prices are steady in all lines of roofings, felts, sheathings and boards. The lowering of the rates in the money markets will no doubt stimulate building among larger corporations and will have an affect on the building supply trade later on in the year as these developments are affected, so dealers are preparing for future business accordingly.

Wrapping Paper Dealers Meet

Owing to the sudden death of Harvey E. Platt, president of the J. L. N. Smythe Company, the report which was to be given in full to the Philadelphia Paper Trade Association by the delegate from the Wrapping Paper Division was curtailed to a single day's meetings of the National Convention, as he was called home by the firm when it was learned that the former late president was stricken. Young Smythe, who is now president and treasurer of the J. L. N. Smythe Company, however, read the detailed account of the single day's activities. The remainder of the meetings of the wrapping paper committees were covered by George W. Ward, head of the D. L. Ward Company, who has been sojourning in the West Indies. Mr. Ward will return to his desk next week and will arrange to give further account of the wrapping paper reports at the quarterly meeting in April.

At the meeting of the Wrapping Paper Division last week it was learned that plans for the extension of the division have been provided for in the amendment to the By-Laws which will be perfected by a committee appointed to submit such an amendment at the April meeting. This amendment will provide for an innovation which will permit twine dealers to join. The committee appointed to present the amendment at the quarterly meeting of the association consist of Simon Walter, head of S. Walter, Inc., and Charles A. Wilder, head of Wilder Brothers, both dealers in wrapping papers and specialties. Wrapping paper dealers reported the kraft situation unsettled by the recent reduction in prices made by some of the mills.

Printers Guests of Paper House of Pennsylvania

More than eighty printing concerns and their sales staffs were the guests of the Paper House of Pennsylvania at the Poor Richard Club last Friday evening when a luncheon and discussion of Strathmore and Champion Coated Papers formed the program which followed. With President N. A. Considine, of the Paper House of Pennsylvania presiding, with his associates, Charles Pabst, Leonard Peck and Miss Catherine Woods, as hosts, the printers' sales staffs heard Cy Norton, of the Strathmore Company, and George Mason, advertising promotion manager, of the Champion Coated Paper Company, give detailed information on the marketing of printed matter and the use of paper as a sales factor. Both executives went into the matter of paper as an aid to selling printing and advertising. Mr. Norton outlined the Strathmore papers and their uses in direct mail advertising. Mr. Mason gave an account of the recently launched advertising campaign instituted by the Champion Coated Paper Company.

Hinde and Dauche Warehouse Damaged by Fire

Fire which started in a chute for waste paper, destroyed the two upper floors of the local paper stock plant of the Hinde Duache Paper Company, at Water and South streets, last week. For two hours the fire fighters fought the flames and succeeded in confining the fire to the two upper stories. The lower floor was used as a stable for the horses owned by the company and the five horses quartered in it were rescued from the flames. Several thousand dollars of paper stock was destroyed.

Leon Beck Ill With Grippe

President Leon Beck, of the Charles Beck Paper Company, 609 Chestnut street, is seriously ill at his home with a severe attack of grippe. Owing to his illness, his report on the National Paper Trade Convention held recently in New York, was postponed by the Philadelphia Paper Trade Association until another meeting. Mr. Beck has been delegate to the National meeting for the past few years, and represented the fine paper division. He is president of one of the oldest fine paper distribution houses in this section. His illness is of such nature that it will be several weeks before he will be able to be at his desk.

Individual Drinking Cup Co. Adds New Product

An entirely new product has been added to the line of the Individual Drinking Cup Company, with factory at Easton, Pa., and offices in the Witherspoon Building. The newest line is the PacKups a patented type of container for "carry out" trade. It is adapted for portable purposes of the food industries and as a liquid container. It is produced in various sizes, from the four ounce to the pint. It is used by the ice cream and soda fountain trades. The Individual Drinking Cup Company manufactures the Dixie Cups, which have a wide distribution locally.

Franklin Paper Co. Develops Leather Paper

Growing demands for leather substitutes has provided the Franklin Paper Company with a broad field for the development of the firm's line of Frankot papers adaptable for such purposes and perfected in the company's own laboratories. At headquarters here are available a complete assortment of leather substitutes used by many industries heretofore confining their production to real leather. These synthetic leather papers now shown in the 1930 samplers include more than 150 effects used by many industries. They are preferred by many of the consuming industries because they can be made in novelty designs which cannot be perfected in

real leather, and are more pliable, durable, and can be imprinted more effectively than leather into the multitude of designs in colorfulness combined with artistic creation which may be had from their use where leather fails to produce similar results.

Japan Paper Co.'s New Spring Papers

New flat papers from Sweden used where a high grade book paper is needed, are being shown by the Japan Paper Company, in the Philadelphia offices in the Witherspoon Building, under management of Warwick C. Miller. The new lines are used principally for advertising pieces. There is shown the newest of spring papers from Holland in heavy cover grades and in medium stocks in antique finishes in brilliant colorings used for advertising pieces. From France, the Japan Paper Comppany has secured an importation of new stationery of the most modish Parisian styles and these are augmented by others from Australia. The line also included announcement stocks to match with the stationary imports, in both flat, papeteries and envelopes.

Edwin B. Kelly Returns to Kalamazoo

Edwin B. Kelly, who for several years has been associated with the Philadelphia offices of the Kalamazoo Vegetable Parchment Company, in the Drexel Building, has returned to the factory at Kalamazoo in other capacity. His duties as manager of the Philadelphia offices have been taken over by W. E. Swan, who is now covering the Quaker City and adjacent territory.

Eckart Mulch Paper Patent Held Infringed

The United States District Court at St. Louis has rendered a decision favorable to the plaintiff in a suit for patent infringement brought by the International Paper Company, owner of the Eckart patents relating to paper mulch, against the Graham Paper Company of St. Louis. The Court held the Eckart patent No. 1,377,566, issued May 10, 1921, for a Method of Enhancing the Growth of Plants, involving the use of mulch paper, valid and infringed by the defendant.

The claims of the patent in issue were Nos. 1, 2, 4, 5 and 7. Claim 1 reads as follows:

"The method of enhancing the growth of plants which comprises superimposing on the ground a flexible covering of opaque heat-absorbing material adapted to distribute the absorbed heat to the soil, planting the plant-producing stock through the covering, and maintaining the covering in place during the growth of the plants."

The Court held that the defendant had infringed the patent by offering for sale and selling mulch paper adapted for use in accordance with the invention covered by the patent with the expectation and intention that purchasers thereof should use the same in accordance with the method covered by the claims.

The decision awards a perpetual injunction against the Graham Paper Company, restraining it from further infringement of the patent and specifically during the term of the patent from selling or offering for sale any paper designated as mulch paper or mulching paper (or word, or words of similar import) or from advertising or holding out as such paper any paper which is adapted for use in accordance with the method covered by the patent.

The defendant is ordered to pay profits and damages on account of past infringement, the same to be assessed by the Master of the court and to pay the costs of suit.

A later patent to Eckart, Reissue No. 15,231, issued November 22, 1921, which also was in suit, was found not to have been infringed and the bill of complaint was dismissed as to this patent.

The Court's decree, entered March 4, 1930, reads in full as follows:

Interlocutory Decree

"This cause came on to be heard at final hearing on January 8, 1930, on the pleadings and proofs of both parties and was argued by counsel and considered by the Court, and thereupon, upon consideration thereof, be it, and it hereby is, ordered, adjudged and decreed as follows:

"1. That Letters Patent of the United States to Charles F. Eckart No. 1,377,566, issued May 10, 1921, are good and valid in law as to Claims 1, 2, 4, 5 and 7, thereof, and that said Eckart was the original and first inventor and discoverer of the improvements patented therein.

"2. That the plaintiff, International Paper Company, is the lawful owner of said patent.

"3. That the defendant has infringed said patent, by offering for sale and selling mulch paper adapted for use in accordance with the inventions covered by said claims with the expectation and intention that purchasers thereof should use the same in accordance with the method covered by said claims.

"4. That a perpetual injunction issue out of and under the seal of this Court directed to the said defendant, Graham Paper Company, its officers, agents, servants, and employees enjoining and restraining it, them and each of them from infringing said Patent No. 1,377,566, or any of the claims thereof above-named and specifically during the term of said patent, from selling or offering for sale any paper designated as mulch paper, or mulching paper (or word, or words of similar import) or from advertising or holding out as such paper any paper which is adapted for use in accordance with the method covered by said patent.

"5. That the plaintiff recover of the defendant the profits, savings and advantages which the defendant has derived, received or made by reason of its infringement of said Letters Patent, and also any and all damages which the plaintiff has sustained by reason of said infringement, and that this cause be referred to a Master of this Court to be appointed to take and state an account of such profits, savings and advantages and to assess said damages.

"6. That the bill of complaint be dismissed as to Letters Patent Reissue No. 15,231.

"7. That the plaintiff recover of the defendant its costs to be taxed by the clerk."

Fire in Finch, Pruyn & Co. Mill

GLEN'S FALLS, N. Y., March 24, 1930.—A section of the plant of Finch, Pruyn & Co. was considerably damaged by fire this week which broke out in the scale house. The blaze was discovered by employees who turned in the alarm. A short circuit in an electric switch was said to have been the cause of the conflagration which for a time threatened serious damage. In addition to the scales for weighing pulp stored in the building it was learned that a considerable amount of tools were also damaged by the flames.

Hundred of persons were attracted to the conflagration as the smoke mingling with steam escaping from paper machines could be seen for a considerable distance. It is believed that the damage will not exceed several hundred dollars.

H. K. Ferguson Takes Over DeVore Co.

The H. K. Ferguson Company, international engineers and builders, with headquarters in Cleveland, reports that it has taken over the DeVore Company of Toledo, Ohio, for many years specialist in glass plant and paper mill layout and design.

H. C. Van Tine, president of The DeVore Company, will join the H. K. Ferguson Company about April 1 as contract engineer and consultant in the design of glass and paper factories.

For fifteen years the DeVore Company handled the design of all plants for the Mid-West Box Company, and its successor, the Container Corporation of America.

Ontario Paper Manufacturers Fairly Active

Output Gradually Approaching Record of Corresponding Season Last Year—Book Paper Mills Quite Busy Meeting Current Requirements—Fine Paper Mills Disposing of Satisfactory Tonnages—Light Weight Papers Moving In Good Volume

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 24, 1930.—Some slight improvement has been discernible in the wholesale paper trade in Toronto and vicinity during the past week or ten days and there are indications that a revival in business this spring is in the offing. The printing industry, for instance, is making fair requisitions for stock and printing supply houses report a better demand for machinery and other equipment. Some printing houses are operating night shifts and while a few of the plants complain of lack of volume in their orders, others together with the lithographing trade, report business as quite satisfactory. Comparatively few printing firms have had any lay-off period this year and the industry as a whole has been well employed. As yet, however, the printing trade is not buying paper in large lots and in not a few cases the job is set up before the paper is ordered. This condition has been more or less permanent for the past year. Paper distributors report a fair call for fine papers and a gradually improving demand for coated stock. The coarse paper market is not as strong as it might be but in this department, as well as in the paper bag division, there are signs of returning activity and good business is looked for in both this spring.

In manufacturing circles a satisfactory degree of activity prevails. Output is gradually approaching the record of the corresponding season of last year and most mills are quite busy—especially the book mills—which are now getting orders ahead to back up their current business. Good tonnages are being turned out and are being disposed of readily by practically all the fine paper mills. Coated paper mills are experiencing a better call for stock and the market in this line is fairly strong. There is only a fair demand for glassine, grease proof and waxing papers but it is better than it was earlier in the year. Mills making tissues, toilets and light weight papers generally report a satisfactory volume of business, with a lot of trade being stimulated by newspaper, direct mail and demonstrating advertising. The paper converting trade lacks pep, although there is a fair call for envelopes with business in the manufactured stationery line somewhat slow. Converters have been up against rather trying conditions for some months largely owing to adverse business conditions generally throughout the province but it is believed that an era of better things is about to dawn, which should mean an improvement in the paper converting market. Just now, however, the volume of business is comparatively small, a condition which no amount of energy along sales lines seems to be able to correct.

Rather quiet conditions in the paper box industry is reflected in lessened tonnage being turned out by the board mills which are operating light as compared with the record in normal times. The paper box manufacturers feel that the spring months are not going to produce any great improvement in conditions and say that it will likely be a case this season of consolidating last year's advance in business and digging in until things right themselves. A certain amount of business, both in folding and set-up boxes is going, of course, but it has not the volume that was expected of it at this time of the year.

Hinde & Dauche Issue Statement

Balance sheet figures of Hinde & Dauch Paper Company of Canada, Ltd., paper board manufacturers, Toronto, indicate a lower working capital, a slight decrease in the value of total assets and reflect expansion during the year by a sharp increase in the value of fixed assets and a substantial decrease in secured call loans. Current assets as of December 31, 1929, exclusive of call loans, were valued at $940,087 contrasted with $897,794 at the end of 1928. Current liabilities are up from $228,770 to $385,470 and net working capital down from $669,024 to $554,611. Cash of $34,690; receivables of $315,648; Dominion of Canada bonds of $98,225; mortgage due of $30,000 and inventories of $461,523 are included in current assets. The most notable change is the drop in secured call loans from $1,150,000 at the end of 1928 to $75,000 at the end of 1929. Total assets of $5,063,593 compare with $5,229,383 and fixed assets, after depreciation, of $3,954,219 with $3,131,470. Depreciation reserve was increased during the year under review from $670,185 to $817,917. Other assets consist of deferred charges of $28,857, mortgage of $60,000 and sinking fund of $28,857. Current liabilities comprise accounts payable, taxes, dividend payable, etc., with the largest item that of purchase contract, mill machinery, $155,000. Funded debt is shown at $1,458,000 and capital and surplus $3,220,122. No profit and loss figures are available, but it is noticeable that earned surplus is down $142,347 from $1,382,989 to $1,240,642 and appraised surplus down $151,645 from $1,042,271 to $890,626. The 299,933 common shares of no par value are placed in the balance sheet at $1,088,853. Highly competitive conditions in the board market are revealed in the fact that the company found it necessary to pass the usual quarterly dividend of 25 cents a share.

Maclaughlan Goes to Fraser Co.

An important change in executive mill management was announced in Toronto a few days ago in the appointment of K. S. Maclaughlan, managing director of Alliance Paper Mills, Ltd., Merritton, Ont., to be vice-president and general manager of Fraser Companies, Ltd., of Edmundston, N. B., of which Archibald Fraser is president and Donald Fraser vice-president. Mr. Maclaughlan, who is a native-born Torontonian, and resides at St. Catherines, was general manager of the Lincoln Pulp and Paper Company, Ltd., at Merritton, Ont., when that concern was taken over a year or so ago by Alliance Paper Mills, Ltd., a Howard Smith Paper Mills subsidiary, the merger having included Ritchie & Ramsay, a coating mill at Georgetown and the Lincoln mill. Just prior to the war he was superintendent of Metals Chemical Company, Welland, Ont., and in 1916 he was construction engineer of the National Synthetic Company, Perth Amboy, New Jersey. From 1916 to 1918 he was supervisor of production and distribution of explosives for the Imperial Munitions Board and in 1919 was assistant to the director of technical education for the Province of Ontario. When the Lincoln mills went into liquidation in 1924 he was appointed assistant to R. Home Smith, the receiver, and in 1925 he was appointed general manager of the company. The Fraser Companies, Ltd., of which Mr. Maclaughlan becomes the manager, manufactures 150 tons of bleached sulphite daily and 60 tons of unbleached and easy bleaching sulphite. Although at this writing his successor has not been officially appointed it is understood that the choice has fallen upon George W. Pauline, now assistant managing director of Alliance Paper Mills, Ltd., and formerly general manager of Ritchie & Ramsay, Ltd., New Toronto, which concern was taken over when Alliance Paper Mills were formed. Mr. Pauline is likely to become managing director of Alliance in Mr. Maclaughlan's stead.

Notes and Jottings of the Trade

Excavating has been started by the contractors preparatory to the

erection at Mount Dennis, near Toronto, of a new branch factory for the F. N. Burt Company, blank form, paper box manufacturers, etc. Plans call for a one-story structure, of steel frame and stone trimmed brick face construction, with saw-tooth monitor roof, and low pressure steam heating.

A caller on a section of the Toronto paper trade this week was N. L. Lance, of Commercial Printers, Ltd., Regina, Sask.

W. P. Bennett & Son, "Package Advisers," 32 Front street, Toronto, have sent out samples of Master Unifoil box covers for which they are Ontario distributors. Accompanying the sample is a neat folder written by Mr. Bennett under the title "Beating Him To It."

Bryant Press, Ltd., one of the largest paper consumers in the Toronto printing field, have installed three new Meihele presses and are also putting in an additional folder. Major Weld is sales manager and D. S. Weld is in charge of production.

George J. Wanless, one of Ontario's old time printers, died in Sandwich, Ont., a few days ago at the age of 83 years. He had spent nearly all his life on the Chatham, Ont., daily papers and in job plants. He was well known to the Western Ontario paper travellers.

News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 24, 1930.—A limited number of sample cabinets, bearing the name, "Designers' Kit of Paper Samples," and containing working sheets of a selected group of fine papers carried by Carter, Rice & Co. Corp., is being distributed by that firm. Some of the products represented in this kit are from the mills of the Strathmore Paper Company, Mittineague and Woronoco, Mass.; Crane & Co., Inc., Dalton and Westfield, Mass.; Louis De Jonge & Co., Staten Island and Fitchburg, Mass., and the Oxford Paper Company, Rumford, Me. The samples are to be given to the artists and used by them in making layout dummies for their customers.

At a recent meeting, one of a series being held by Carter, Rice & Co. Corp., the speaker was L. B. Folsom, president of the Folsom Engraving Company, Boston, Mass. Mr. Folsom rather briefly explained the various photo-engraving processes, from line plate to half-tone, process color, water color and lithography. He noted the method by which the plates are made, demonstrating through samples the steps necessary in each operation. The Folsom Engraving Company at the present time is making plates to fit the paper because it is felt that this method safeguards the final result. He closed with an invitation for any or all of the Carter Rice employees to visit the plant of his company.

The Meek & Whitney Paper Company, Mill Sales Department, John A. Andrew, vice president, 10 High street, have become New England distributors for the Hawthorne Paper Company, Kalamazoo, Mich. The Meek & Whitney Paper Company is now handling products of three mills, the others being the Allied Paper Mills, Kalamazoo, and the Sherman Paper Company, Watertown, N. Y.

The March "How," published by Tileston & Hollingsworth, and edited by Arthur V. Howland, contains analyses made by Charles R. Capon, artist and typographer, of the January, February and March sheets of the 1930 calendar, issued by that company. Attached to the inside back cover of "How" is a swatch of Crinoline Cover, in ivory, blue, gray, coral, green, and cafe. The publication is printed on Crinoline Super Plate, White, and Crinoline Cover, Green.

Watson M. Gordon, of the S. D. Warren Company, and Arthur V Howland, of the Tileston & Hollingsworth Company, were on the committee in charge of the "Art in Advertising" exhibit recently held by the Advertising Club of Boston at the Boston City Club.

A. P. Lane, of the Great Northern Paper Company, and R. W. Randall, of the Plymouth Cordage Company, were among those prominent at the New England Shippers Board Meeting.

J. P. O'Brien Heads Binders Board Association

J. P. O'Brien, chairman of the board of the Otter River Board Company, of Otter River, Mass., has just been elected president of the Binders Board Manufacturers Association as a cap-sheaf to a long and honorable career in the binders board industry. The

J. P. O'BRIEN

association will hold its first annual meeting under Mr. O'Brien's presidency in Chicago March 27 when problems of warping, foreign competition and association advertising will be discussed.

New Standardized Elevator Drive

A new standardized drive for elevators has just been announced by H. W. Caldwell & Son Company of Chicago.

This drive is compact, efficient and positively quiet at all speeds. It is built to operate centrifugal discharge, perfect discharge or continuous bucket elevators requiring 3 to 15 h.p. The entire line is standardized and carried in stock.

The first reduction of the drive is made up of a ruggedly built fully enclosed worm gear speed reducer to which a motor is coupled. The motor and the worm reducer are accurately aligned on a welded steel base, making a compact assembly easily supported on the elevator casing or platform.

The second reduction in speed is made by a Link-Belt Roller Chain Drive, which was selected because it furnishes a maximum of strength, durability, efficiency and quietness of operation, combined with a minimum of weight and of space required. It also acts as a flexible connection between the reducer shaft and head shaft.

A new book, No. 1086, just published, is devoted to the construction of the unit and illustrates installations. This book will be sent upon request.

Paul L. Lewis Paper Co. Incorporates

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, March 17, 1930.—The Paul L. Lewis Paper Company of this city has just been incorporated to deal in paper of all kinds. The incorporators are Paul L. Lewis, A. C. Linxweiler and Charles D. Heald.

Authority, it is reported, has been given to issue 500 shares of stock of $100 each.

The incorporators are well known business men of Dayton. Lewis has been engaged in the business; Linxweiler is identified with a large retail concern and Heald is an attorney-at-law.

Mr. Lewis has been engaged in the paper and twine business under his name at 601 East Third street for some time but is planning an enlarged business.

Fox River Valley Paper Mill Improvements

Filter Plant at Biron Mill of Consolidated Water Power & Paper Co., Completed and In Operation—New Wood Room to be Constructed Next — Installation of Machinery Started at Menasha Plant of Marathon Paper Mills Co.—Structure Fronts Fox River

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 24, 1930.—Major improvements and changes at the mills of the Consolidated Water Power and Paper Company, which have been in progress for most of the last year, will soon be completed. A new filter plant under construction at the company's mill at Biron, Wis., has been finished and is now in operation. It is furnishing a daily capacity of 5,000,000 gallons of clear, clean water for the mill.

A new wood room will be built next for the Biron mill. The retaining wall beneath the present wood room is being rebuilt first, and the company then will install two new slasher saws and drums. The wood room building also will house ground wood rifflers, a clay plant and a carload size system.

Additional warehouse space is given the Kimberly-Clark Corporation, Neenah, Wis., through the purchase of a building formerly occupied by the J. F. Stroebel Hardware Company of that city. The property covers a lot 60 by 140 feet adjacent to a railroad siding, and has a building of brick, concrete and steel, and one story high.

Installation of machinery has been started at the new factory building of the Marathon Paper Mills Company at Menasha, Wis. The structure is two story, and of concrete and steel. It fronts on the Fox River, giving ample lighting facilities for particular work. The carton printing and electrotyping departments are being moved into this new unit from the old plant, which will be dismantled. Considerable new machinery is being installed also for the printing of cartons.

Industrial Safety Banquet Held

One of the most extensive safety campaigns in the state was concluded at Green Bay last week when an industrial safety banquet was held at Hotel Northland. More than 500 persons were present, and were given recognition for their interest in safety. Frank P. Vaughn, manager of the Bay West Paper Company, presided, and announced that the enrollment in the school this year was 963 persons, the largest ever on record. Attendance also was much better this year. The banquet speaker was William R. Bennett, editor of the Lyceum magazine. He gave an inspirational talk entitled "Let's Keep Alive." Paper mills co-operating in the school were: Northern Paper Mills, Fort Howard Paper Company, the Hoberg Paper and Fibre Company, and the Straubel Paper Company.

A large safety meeting, one of a series, also was held at Marinette, Wis., last week with R. G. Knutson, of the Wisconsin Industrial Commission, as the principal speaker. His subject was "The Success of Safety."

Lawrence Institute Making Progress

The Lawrence Institute of Pulp and Paper Chemistry, conducted by Lawrence College, Appleton, Wis., is making good progress with its first students. Students are admitted only after they have completed a four year college course with major study in science. The present enrollment includes graduates from Massachusetts Institute of Technology, University of Maine, and the University of Minnesota. The institute is supported by 90 per cent of the Wisconsin paper mills, and has an annual budget of $60,000. Dr. Otto Kress is the director.

News of the Industry

Forestry experts of Wisconsin paper mills will be represented at the annual meeting of the American Forestry Association, to be held at Minneapolis April 29 to May 1. The forest situation in this state, and in Minnesota and Michigan, will be one of the major subjects for discussion. Glenn Frank, president of the University of Wisconsin, will be one of the speakers.

An agreement has been reached between the water power interests of the Fox River Valley, and the Association for Relief of High Water to the effect that level of the water for a period of one year will be 15 inches above the crest of the Menasha Dam, which controls the outflow from Lake Winnebago. The paper mills are making a survey to determine if it will be possible to establish reservoirs along the Wolf River, to assure an adequate and uniform water supply all through the year without flooding farm lands.

Paper mills of the Fox River Valley were inspected last week by 27 students of the University of Minnesota. The pupils are seniors in the University chemistry course and were interested in the practical application of chemistry in industry. They also planned to visit plants in Chicago.

W. H. Monsson has resigned as chemist on the pulp and paper staff of the United States Forest Products Laboratory, Madison, Wis. He has joined the chemical staff of the Munising Paper Company, Munising, Mich. He had been with the laboratory since 1923 and devoted most of his time to sulphite pulping research.

Incorporation has been announced of the Allen Waste Paper Company at Menasha, Wis. The capitalization is $10,000, consisting of 100 shares of common stock with a par value of $100. Identity of the incorporators has not been made public, as the papers were signed by Frank, Wheeler & Pelkey, a law firm of Appleton, Wis.

Making Improvements in West End Mill

[FROM OUR REGULAR CORRESPONDENT]

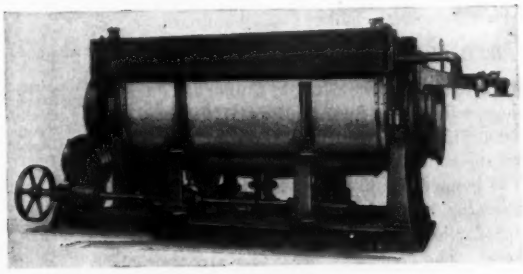
CARTHAGE, N. Y., March 24, 1930.—A large force of machinists and engineers in the employ of the Crown-Zellerbach Company started work this week on the assembling of the second machine in the newly acquired mill formerly known as the West End plant following completion of alternations and construction work to the new machine room. Construction work at the new plant and the assembling of equipment continue to necessitate the steady employment of about two hundred men daily. The first machine was completed about a month ago and is now running day and night turning out about 80 tons of paper daily. The machine was formerly used in the West End Paper Mill with the exception of a new winder which was installed by the Bagley & Sewall Company. The second machine was purchased several months ago from the Scott Tissue Company, of Pennsylvania, where it had been in use only a few years. Since being shipped to this place last fall it has been housed in buildings adjoining the plant.

A number of converting machines used for turning out rolled and finished tissue are running daily and a crew of workmen have started work on the changing over and enlargement of the converting department. Several of the hard wound machines were moved to the main floor of the plant this week to make way in the upper section for the new converting machines which will be installed. The converting department will be practically located on the main floor of the building which formerly housed the old machine shop and storage department of the West End Mill. It was announced that the opening of this section will virtually double the capacity of the department.

THE FIRST BIRD SCREEN IS STILL GOING STRONG

BIRD MACHINERY

The first Bird Screen, with many thousands of tons of clean stock to its credit, is still good for years of efficient and profitable service. The Bird Screens that canny mills are installing today have the same right principles and the same staying qualities . . . plus refinements in design that make them even more efficient and profitable. Let us show you how they fit into your set-up.



BIRD MACHINE COMPANY
SOUTH WALPOLE
MASSACHUSETTS

3845

American Writing May Open Montreal Branch

When Established, Plant Will Probably Produce Tissue Paper Products, Including Crepe Paper, Napkins, and Other Specialties—Other Grades Manufactured In Holyoke Mills May Later Be Developed—Canadian Subsidiary May Eventually Be Organized

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 24, 1930.—It is announced here that arrangements are under way for the establishment at Montreal East of a branch plant of the American Writing Paper Company, of Holyoke, Mass. Not much definite information is available on the matter, but it is thought that the branch will largely produce tissue paper products, such as crepe paper, napkins and other paper novelties, and later develop some of the many other items produced in the Holyoke mills. If the plans go through, a Canadian subsidiary is to be organized, it is said, to be run as a separate Canadian company.

Important Departure in Sulphur Production

At the St. Maurice Mills of the Canada Power and Paper Corporation a unit is to be installed for the extraction of sulphur from native pyrites, and if this proves successful, it is expected that ultimately Canada will not need to import sulphur for its pulp and paper industry. The process is the results of experiments conducted by Horace Freeman, chemical and metallurgical engineer, of Shawinigan Falls, Que. There are large deposits in Canada of pyrites carrying a high percentage of sulphur. Mr. Freeman's process is to burn the pyrites and oxidize the sulphur. Steam sufficient to cover the cost of operating is generated by the burning of the pyrites and sulphur dioxide is obtained in suitable concentration for use in pulp and acid manufacture. The method has already proved a success in the big Britannia mine in British Columbia. At the present time Canada imports large quantities of sulphur, mainly from Texas, and more of this is used by the paper mills. Last year the imports of sulphur had a total value of $3,789,000, which was an increase of $826,000 over the value of the sulphur imports of the previous year.

New Wayagamack Director

Following the amalgamation of the Wayagamack Pulp and Paper Company with the Canada Power and Paper Corporation, George Chahoon, Jr., has been appointed to the directorate of the Wayagamack Company, replacing J. Frater Taylor, of London, England. Mr. Chahoon was formerly with the Lurentide Paper Company, and is now president of the Canadian Power and Paper Corporation, Sir Herbert Holt being the chairman of the Board.

B. C. Pulp and Paper Co.

The fourth annual report of the British Columbia Pulp and Paper Company whose mills are at Swanson Bay, B. C., show operating profits of about $123,000 less than for the preceding year. This reflects in part the conditions which prevailed in the sulphite pulp market, but it is pointed out in the report that sales and profits were also temporarily reduced through the diversion of part of the company's production from one market to another, in the latter part of the year. The change in marketing arrangements is stated to be already working out to the benefit of the company. The company's mill has a capacity for the production of 80,000 lbs. per day of easy bleaching and strong sulphite fibre.

Paper Companies Protest Tax on Fuel Oil

The British Columbia Government is proposing to place a tax of half a cent a gallon on fuel oil, with the object of helping the coal industry. Both the two great railway companies are objecting to the tax, and joining with them in their protest are various pulp and paper companies, including the Powell River Company, Pacific Mills and British Columbia Pulp and Paper Company. The pulp and paper companies argue that the fuel tax would place them in a serious position in competition with mills operating in Washington and Oregon, where oil is not taxable. In British Columbia the mills already pay the Dominion government an amount equal to that now proposed by the provincial government, and to double this would place the industry in a serious situation, it was contended.

Box Board Production in January

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 3, 1930.—January production of box board, based on reports to the Department of Commerce by 97 firms operating 124 plants (reports for earlier months including five concerns now out of business) was 72.8 per cent of capacity, as compared with 63.2 per cent in December and 80.8 per cent in January, 1929. In the following table the capacity data vary according to the normal number of working days in each month:

Year and Month	Operation			Production			New Orders	Unfilled Orders (end of month)
	Inch hours		Per cent of Capacity	Short Tons		Per cent of Capacity	Short Tons	
	Capacity	Operated		Capacity	Output			
1929								
Jan.	11,417,328	9,297,029	81.4	307,268	248,290	80.8	241,086	87,974
Feb.	10,539,072	8,435,967	80.0	283,632	228,034	80.4	227,595	87,726
March	11,417,328	9,416,990	82.5	307,268	256,118	83.4	266,895	96,209
April	11,417,328	9,278,701	81.3	307,268	251,147	81.7	250,366	98,162
May	11,417,328	9,526,063	83.4	307,268	264,830	86.2	240,395	89,485
June	10,978,200	9,170,955	83.5	295,450	241,028	81.6	231,230	81,880
July	11,417,328	9,045,362	79.2	307,268	236,377	76.9	240,617	88,275
Aug.	11,856,456	9,601,037	81.0	319,086	262,307	82.2	257,318	82,969
Sept.	10,539,072	8,553,104	81.2	283,632	235,962	83.2	247,329	87,304
Oct.	11,856,456	9,495,747	80.1	319,086	264,631	82.9	264,338	85,600
Nov.	10,978,200	8,479,471	77.2	295,450	237,496	80.4	212,186	67,174
Dec.	10,978,200	7,672,699	69.9	295,450	186,683	63.2	174,717	59,721
Total year	134,812,296	107,973,125	80.1	3,628,126	2,912,908	80.3	2,854,072	.....
1930								
Jan.	11,417,328	8,466,604	74.2	307,268	226,910	73.8	226,824	63,349

Year and Month	Shipments of boxboard	Stocks of boxboard, end of month	Consumption of waste paper		Per cent of Capacity	Stocks of waste paper end of month	
	Short Tons		Capacity	Consumed		At plants	In transit and unshipped purchases
			Short Tons			Short Tons	
1929							
January	247,498	56,804	297,440	238,652	80.2	137,251	49,104
February	227,206	57,398	274,560	217,442	79.2	126,212	54,121
March	258,604	54,982	297,440	242,073	81.4	137,008	51,520
April	247,773	57,881	297,440	231,089	77.7	142,666	68,005
May	260,283	62,311	297,440	248,813	83.7	150,048	54,433
June	235,865	62,384	286,000	234,119	81.9	159,005	56,904
July	235,863	63,333	297,440	215,537	72.4	175,306	64,359
August	263,140	61,853	309,231	256,815	83.0	171,360	61,571
September	240,349	58,709	274,560	230,636	87.5	174,884	89,510
October	268,494	59,244	309,231	254,166	82.2	185,169	73,135
November	236,575	*61,703	286,000	229,706	80.3	193,428	52,851
December	182,204	65,178	286,000	175,905	61.5	198,199	50,380
Total year	2,903,854	.....	3,512,782	2,774,953	79.0	.....	.....
1930							
January	228,988	62,685	297,440	219,597	73.8	175,792	55,961

* Revised.

C. E. Beecher Leaves Glassine Paper Co.

The Glassine Paper Company, West Conshohocken, Pa., announce the resignation of Chester E. Beecher, president since April 1, 1925. The progressive policies initiated by Mr. Beecher will be continued under the direction of Robert F. Nelson, vice president and general manager. Other officers are Charles B. Fritz, president (chairman of the board of directors, Fritz & LaRue, New York City), George T. Fritz, secretary and treasurer.

The Glassine Paper Company manufacture a complete line of high grade glassine, plain and embossed, also greaseproof papers.

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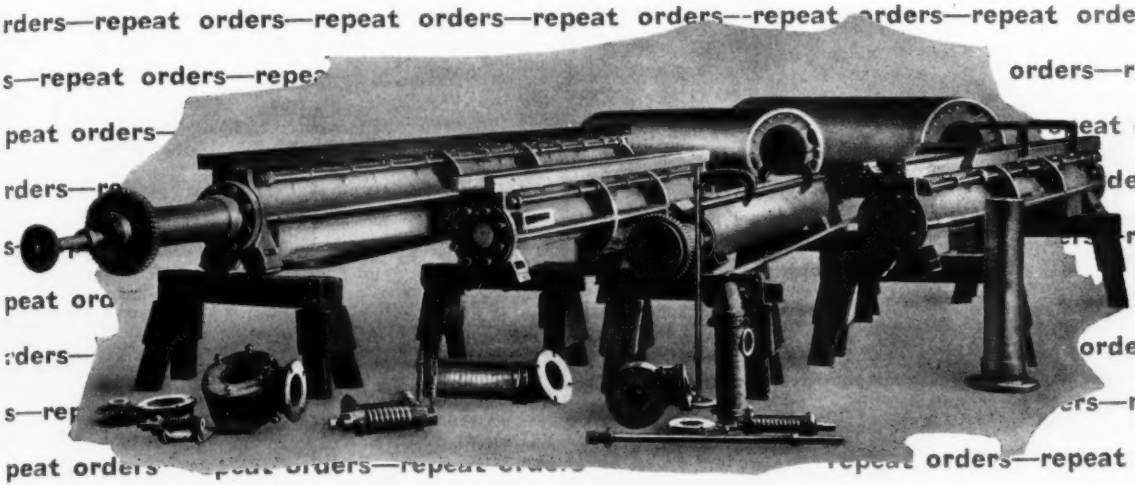


Downingtown (Kilberry Type) Suction Rolls have revealed more sound merit in actual service, than we would have dared claim of them several years ago. Numerous repeat orders have resulted, from the high degree of satisfaction derived from initial installations. Write for list of Repeat Order Users and information about our Adjustable and Non-Adjustable Rolls.

▼ ▼ ▼

DOWNINGTOWN MFG. CO.
DOWNINGTOWN, PA., U. S. A.

Paper Demand Improving Slowly In Chicago

Outlook for News Print Industry More Encouraging, Due to Reports of Larger Advertising Budgets—Ground Wood Papers and Specialties In Excellent Request — Fine Paper Market Continues Fairly Steady—Kraft Paper Situation Very Disappointing

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 24, 1930.—The chief topic of conversation in most Chicago paper houses continues to be the kraft situation. It is, of course, of prime interest to kraft jobbers and manufacturers representatives. It is almost as interesting to houses dealing in other lines inasmuch as some of them are reported as being slightly affected by overproduction themselves. Comment on many of the floors of the Conway Building, the Tribune Tower and in offices of jobbing firms indicate that kraft is about forty per cent over produced, that many of the sales that are being made are profitless sales and what the outcome will be no one seems to want to state though it is evident that those commenting believe the price cutting will just have to wear itself out. Many jobbers, and notably the Chicago Paper Association, are asking for higher prices and stability.

Other lines are improving slowly. News print, with February out of the way, is disposed to make progress with larger advertising budgets as the greatest incentive. Specifications are reported off but there is little or no pessimism manifested due to the Spring business expectations. Book papers are fair with ground woods and ground wood specialties in much improved shape. Fine papers are only fair although some mill representatives insist that their mills are five and six weeks behind in orders. The board market, despite all of its difficulties, is much improved and constitutes a bright spot in this report. Waste papers are active. Tissues should go well at least until after Easter.

Eastern's Sales Forces Increased

With the acquisition of the Orono Pulp and Paper Company by the Eastern Manufacturing Company the Chicago offices under the direction of Harold Knott, who is also president of the Salesmen's Association, Chicago division, take on more activities including an increase of the sales force. First of all J. H. Coy, Jr., son of the popular Jim Coy of Flambeau connections, has accepted a position with Eastern and will work in this territory. The young Mr. Coy was formerly connected with the Dietrich Paper Company. He has the ear marks of being as good a salesman as his Dad. The second acquisition is W. J. Tilden, formerly of the International Paper Company and now with the Eastern Manufacturing Company in this territory. The third is F. W. Becker who was formerly representing the Orono Pulp and Paper Company in Ohio and who will now be, with the recent taking over of Orono by Eastern interests, in the Chicago office mainly taking care of Orono sales in the Chicago territory. So the Eastern Manufacturing Company offices in the Conway Building, now the headquarters for Mr. Knott, Mr. Becker, Mr. Tilden and Mr. Coy, Jr., will be well prepared to take care of Eastern and Orono interests in the Chicago territory.

Chicago Paper Salesmen's Activities

The Salesmen's Association of the Paper Industry, Chicago Division, will, within the next week, appoint a golf chairman and plan to hold the first of the monthly tournaments in April—if the weather man is favorable. If not then, golf activities will begin for sure in May and continue until Fall. The popular speaker program of the association, which features well known speakers once a month, will also be resumed shortly, according to Mr. Knott.

News of the Trade

News comes from the offices of the Jacob Seibert Company, 228 North LaSalle street, that Seibert, whom most of the paper trade knows as "Jake," is to handle the Case Manufacturing Company line including the following items, Back-Linings, Red Flexibles, Red Wallet Stock, Chocolate Board, Lavender Board, Absorbent Paper and Rope and Jute Pattern Papers. Mr. Seibert formerly represented large kraft interests in this territory and, prior to his return to business in Chicago around the first of the year, represented the International Paper Company in its kraft division.

From the West Virginia Pulp and Paper offices comes current prices as of March 15, on coated papers and standard mill grades sold in original packing only. The coated paper list carries prices on Extra No. 1 Enamel C.2 S White, No. 1 Enamel C.2 S. White, Enamel C 2 S. White, Enamel C.2 s India, Folding Enamel C.2 s White, Litho C.1 S. White, Enamel Cover and Enamel Cover India. The Standard mills grades listed include prices and description of fifteen different items including super white, white bond, white writing, etc.

California Fruit Wrapping Mills

In the annual Mid-Winter Development Number of the *Progress-Bulletin* of Pomona, Cal., is printed an interesting article with many pictures of the California Fruit Wrapping Mills, Inc. The article in part says:—

"One of the largest industrial plants in the greater Pomona Valley is that of the California Fruit Wrapping Mills, Inc., established in Pomona in 1926, and now producing annually fruit wrapping papers and paper to supply a general wrapping need to the value of more than one million dollars. F. O. Fernstrom is president of the company, and his brother Erik Fernstrom is vice president and acting secretary-treasurer. The mill as it stands today represents an investment of over $1,000,000, with a payroll of over $200,000 annually. This mill is one of the new institutions paving the way for an industrial expansion which will make Pomona a larger and more important center.

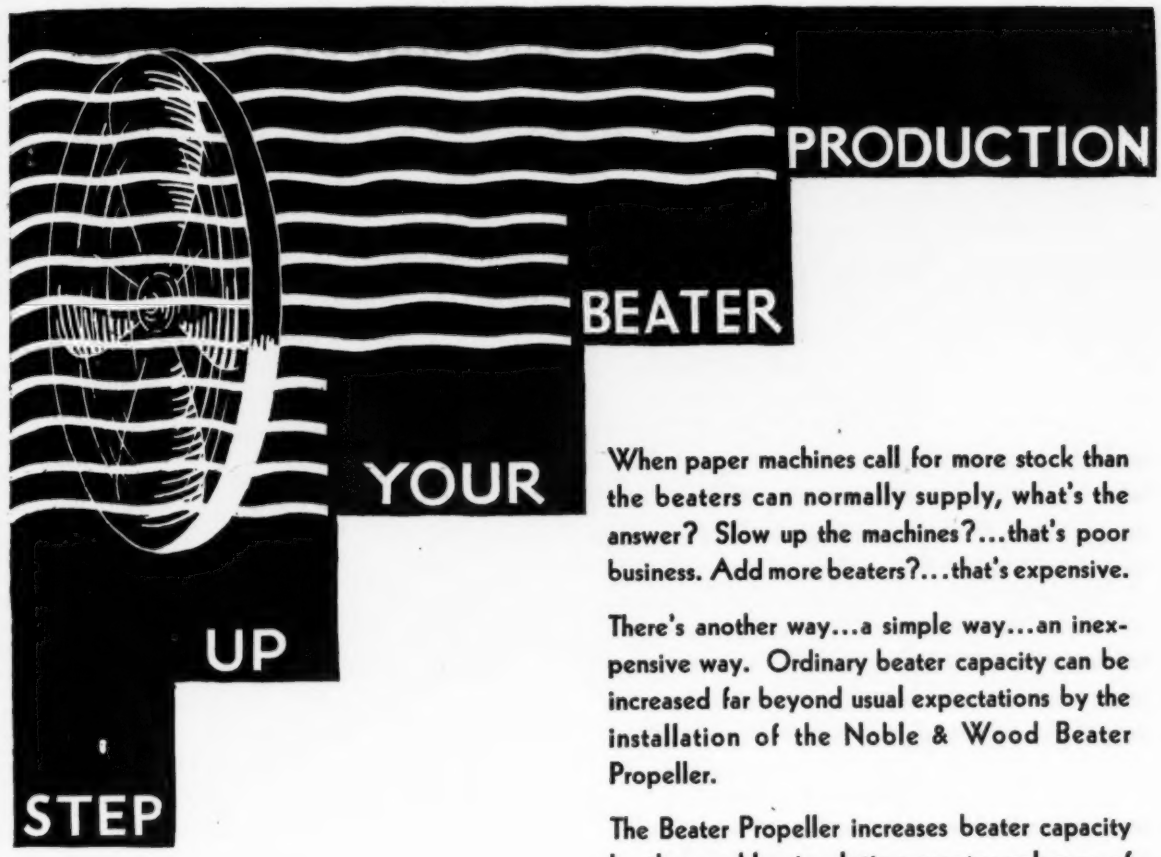
"The paper mill was located in the heart of the great citrus belt because it was intended to serve the citrus grower in an important manner. It was upon the invitation of the fruit industry, in fact, that the concern entered this field. That was in 1926, at which time long term contracts were made with members of the California Fruit Growers Exchange, the Mutual Orange Distributors and others. Soon after the mill commenced operations additional contracts were made. This made it necessary to install added machinery.

"A second paper making machine was therefore purchased and put into operation at the beginning of 1928, increasing the capacity of the plant by over 150 per cent, giving it at the present time a total capacity of nearly 7500 tons per year.

"The first machine installed was known among paper makers as a "Yankee" employing the principle of a large drying cylinder to handle the web as it comes from the felt belts. This principle produces paper with a glossy surface on one side.

"The second and larger machine installed was of the multiple cylinder type, the paper from the web being dried on a series of small cylinders, the finished product coming out with an equal finish on both sides. The California Fruit Wrapping Mills is the only one on the Pacific Coast equipped to furnish both types of paper wraps.

"A few months after the mill got under full swing, the management found an opportunity to supply wraps for apple growers, and a considerable tonnage now goes to supply contracts with growers of apples located in several different countries. The mill is also manufacturing a large percentage of fruit wraps for the California and Mexican cantaloupe and tomato business."



When paper machines call for more stock than the beaters can normally supply, what's the answer? Slow up the machines?...that's poor business. Add more beaters?...that's expensive.

There's another way...a simple way...an inexpensive way. Ordinary beater capacity can be increased far beyond usual expectations by the installation of the Noble & Wood Beater Propeller.

The Beater Propeller increases beater capacity by thoroughly circulating greater volumes of higher density stock than the beater alone can handle. It circulates this stock faster. Effects more speedy hydration. Reduces the beating cycle. Mixing of fillers, size and colors is achieved more rapidly and uniformly.

No radical change is needed in your present equipment. No added floor space . . . very slight power increase. In fact, critical checks on actual installations have shown considerable reductions in total horse power per ton of stock.

THE NOBLE & WOOD PATENTED BEATER PROPELLER should not be confused with the ordinary propeller type of agitator. It is scientifically designed to set up positive, continuous circulation throughout the entire tub.

Its installation requires very little time. It can be done during any regular shut-down period, without interrupting production schedules.

If you will send us details and dimensions of your beater equipment, we will submit a proposal without obligation. Or, if you prefer, a representative will give you the entire story, in your office, at your convenience.

NOBLE & WOOD
MACHINE COMPANY
Hoosick Falls New York

Boston Paper Trade Association Banquet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 20, 1930.—The Hon. Frank G. Allen, Governor of Massachusetts, and the Hon. Herbert Parker, chairman of Massachusetts Bay Colony Tercentenary Committee, formerly Attorney-General of Massachusetts, were guest speakers at the forty-fourth annual meeting and dinner of the Boston Paper Trade Association at the Algonquin Club, Wednesday evening, March 19, one of the most successful gatherings of the association ever held. The addresses of both men held the close attention of their hearers throughout. One of the features of the evening was the presentation of a silver plate from the association to Secretary F. Bendel Tracy, who was recently married.

The dinner was preceded by a reception. The business meeting was called to order by President Hubert L. Carter and it was voted to dispense with the reading of the minutes of the last meeting, and to let the records stand approved, following the precedent of a long period of years. The following, whose names were read by Secretary Tracy, were elected members, the secretary casting one ballot for them according to the vote of the meeting: H. A. Allen, of the Pratt Paper Company, Boston; John H. Brewer, of Storrs & Bement Co., Boston; Charles H. Barr, of Holyoke, Mass.; John E. Roach, of the Fort Hill Paper Company, Boston, and Kendall Wyman (special membership), Fitchburg, Mass. Taps were sounded during a silent toast to two members, P. K. Mohun and John B. Kelley, who had died during the year. The report of Treasurer Harry D. Casey which was accepted, showed a little more than $5,000 in the treasury. The report of the auditor, Charles H. Wood, was accepted.

Albert R. Smith Elected President

The following, whose names were read by Col. Charles S. Proctor, chairman of the nominating committee, were elected:

President, Albert R. Smith, treasurer and general manager of the Keith Paper Company, Turners Falls, Mass.; First Vice President, Charles A. Esty; Second Vice President, Frank B. Cummings; secretary, F. Bendel Tracy; treasurer, Harry D. Casey. Executive committee, Norman Harrower, chairman, Charles W. Fields, and W. E. Porter, Jr. Membership committee, Perry B. Von Olker, chairman, W. W. Jenks, Charles A. Young, Royden Loring and R. M. Stone. Arbitration committee, George W. Wheelwright, chairman, Arthur L. Hobson, Irving N. Esleeck, and W. E. Pratt. Auditor, Charles H. Wood.

President-elect Smith, who was then presented, expressed his thanks and appreciation for the honor. He stated that he had attended the meetings of the Boston Paper Trade Association for many years and had enjoyed them. He felt that the meetings denoted contact and promoted friendships. He said that President Carter had handed him as his first official duty a very pleasant one. After complimentary remarks concerning Secretary Tracy, President Smith presented him with a wedding gift from the association. Mr. Tracy expressed his appreciation and on opening the package the gift proved to be a large silver plate.

President Carter then introduced Governor Allen as a successful business man, who had been four years in the Senate, four years as Lieutenant Governor and thought perhaps he would run the same time or longer as Governor and added that here in Massachusetts we appreciate one who has the courage of his convictions.

Governor Allen expressed his pleasure at being asked to be present. He marvelled at the rapidity with which the business meeting was put through. After a few humorous stories, the Governor spoke of the favorable financial condition of the State, noting that Massachusetts had reduced its debt from $40,000,000 in 1920 to about $10,000,000 at the present time and had cut down the State taxes from $14,000,000 to $7,000,000. He outlined what was being done in behalf of the poor of the State, in the hospitals, social welfare, and prisons. He referred to the new prison being built at Norfolk but said that no experiments would be conducted with prisoners that would lead to disaster. All of this work is being carried on without putting an extra burden on the taxpayers or on industry. Gov. Allen predicted that Massachusetts would be greater both industrially and in the care of unfortunates. He adminished his hearers to be politicians in the proper sense of the word and if they had an honest and efficient government to keep it that kind of a government.

Herbert Parker a Speaker

The Hon. Herbert Parker expressed his happiness in being present at a meeting of such a munificent organization and glad to live for a moment in its charitable atmosphere. Mr. Parker preceded his discussion of "The Translation of a Royal Charter into the Constitution of a Commonwealth" with witty and complimentary remarks which were apparently much appreciated. He said, "When I think of your industry I am reminded that you are in a sense in the prosecution of your industry dealing with a frontier, overcoming its barbarities. So it is no fanciful analogy that you are always dealing with the frontier of a receding forest, for you deal with the translation of a fiber which carries the instruction of the printed word to all the world." The speaker related a humorous incident which occurred in a Michigan town by which flowed a stream carrying logs for a paper mill. He then noted the early days of the Puritans. He held that the Puritans were unfortunate in their biographer Hawthorne, but happier in that Longfellow was their historian. The speaker stated that the Puritans thought the Commonwealth would be more lasting founded in the walls of a church and their ministers translated from the Charter of a King every requirement of a State. A rising vote of thanks was given the speakers and the meeting adjourned.

Those Who Attended

The following were present:

Governor Frank G. Allen, Geo. D. Allen, H. A. Allen, Geo. C. Andrew, John A. Andrew, Sumner B. Andrew, Henry C. Barr, Arthur F. Bell, E. D. Bement, W. W. Binford, Floyd H. Blackman, John F. Blackman, Graham Blandy, 2nd, A. M. Boothbay, John H. Brewer, Arthur E. Brigham, H. S. Brown, Arthur M. Burr, R. H. Campbell, Hubert L. Carter, James Richard Carter, 2nd, R. B. Case, Harry D. Casey, Herbert J. Casey, T. Charles Casey, P. D. Caskey, Warren L. Chace, Howard E. Chase, Asaph Churchill, Nathan S. Clark, Dexter D. Coffin, A. E. Crowell, E. Lindsey Cummings, F. B. Cummings, E. B. Dik, Robert W. Ely, Gordon E. Emerson, Irving N. Esleeck, C. A. Esty, Arthur F. Fay, Nelson Feeley, Paul S. Fiske, H. C. Fowler, Arthur W. Frank, John L. Gibson, Arthur C. Hall, Arthur E. Ham, Herbert C. Ham, James L. Ham, Norman Harrower, Edgar P. Hay, William H. Hilton, Arthur L. Hobson, F. J. L. Hoss, Everett F. Howarth, Ralph N. Humes, H. A. Hurlbert, John E. A. Hussey, C. F. Jameson, Jediah P. Jordan, Frederick H. Keep, John Kelley, F. B. Korbel, E. H. Little, Wm. B. Livermore, Willard H. Loud, Erving F. Lowe, M. L. Madden, Wm. J. McLellan, W. A. Merrill, Aaron P. Mitchell, W. L. Mussey, Charles W. Nelson, C. E. Newell, John J. O'Brien, R. N. O'Neill, Maurice A. Park, Hon. Herbert Parker, A. E. Pearson, W. Edwin Porter, Jr., Ernest R. Potter, Walter M. Pratt, Charles S. Proctor, C. E. Rice, John E. Roach, Wm. Ross, H. B. Sargent, A. R. Smith, Donald R. Smith, Wm. N. Stetson, Jr., Edward H. Stone, R. M. Stone, Blair B. Stringfellow, Jr., J. G. Swift, J. Gilbert Swift, Jr., Roger B. Taft, A. A. Tanyane, Royal P. Teele, Charles W. Townsend, F. Bendel Tracy, H. C. Upham, John B. Van Horn, W. G. Very, John W. Vivian, C. Frederic Wellington, Charles G. Wells, R. H. Welsh, Frank H. Winter, Charles H. Wood, C. W. Wood, Fred L. Wood, Wm. H. Wood, H. R. Woodward, Kendall Wyman, P. D. Wyman, Charles A. Young, and L. C. Young.

Fig. 106, Jenkins Standard Bronze Globe Valve.
Fig. 352, Jenkins Standard Bronze Swing Check Valve.
Fig. 370, Jenkins Standard Bronze Gate Valve.

Valves, too, must be made to fit their job

News print . . . machine finish . . . super coated . . . each kind of paper is made to fit the needs of its own job. So, too, with valves . . . globe valves, check valves, gate valves . . . and valve performance depends on proper valve selection.

Jenkins Bros. have been making valves for 66 years. There is a Jenkins Valve for numerous paper mill needs. Whether for power plant, for plumbing, heating, fire protection, or equipment piping. . . there is a Jenkins in bronze or iron that will bring to the job long, leak-tight valve performance.

From the selection and analysis of metals to the final assembly, each Jenkins is manufactured to those high standards of workmanship Jenkins have maintained since 1864. Supply houses everywhere can furnish Jenkins Valves.

JENKINS BROS.

80 White Street, New York, N.Y. 133 No. Seventh Street, Philadelphia, Pa.
524 Atlantic Avenue, Boston, Mass. 646 Washington Boulevard, Chicago, Ill.
JENKINS BROS., Limited, Montreal, Canada; London, England
Factories: Bridgeport, Conn., Elizabeth, N. J., Montreal, Canada

Jenkins
VALVES
Since 1864

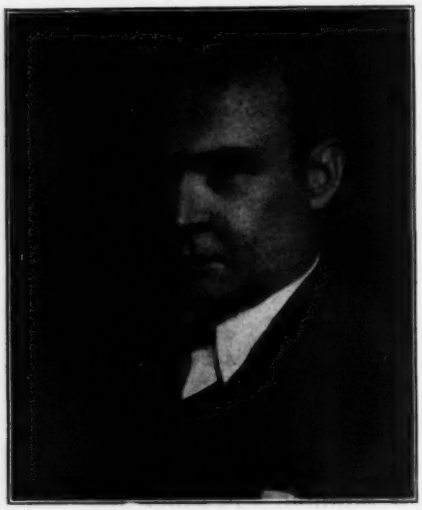
Waste Material Dealers Hold Annual Meeting

The annual convention of the National Association of Waste Material Dealers was held at the Hotel Astor, New York, on Tuesday and Wednesday, March 18 and 19, and attracted an excellent attendance from all sections of the country.

At the general meeting, Dr. Hugh P. Baker, formerly executive secretary of the American Paper and Pulp Association and now head of the Trade Association Bureau of the Chamber of Commerce of the United States, gave an interesting address on the work of trade associations.

Carlton B. Overton Elected President

Carlton B. Overton, of Castle & Overton, Inc., leading dealers in paper mill supplies, of New York, was unanimously elected president for the ensuing term. Mr. Overton is 35 years of age and is a graduate of Williams College. He has been an assidious chairman of the Foreign Trade Division of the association, an



CARLTON B. OVERTON

active lieutenant in the World War and for several years a vice president of the association.

Directors elected for two-year terms were George H. Banks, Louis Birkenstein, David Charak, H. H. Cummings, George B. Doane, Ben Friedman, Maurice Goldstein, Albert T. Hicks, E. G. Jarvis, J. S. Katz, J. M. Maher, Herman Muehlstein, J. W. Paterson, R. W. Phillips and Ivan Reitler, while E. E. Oury and Walter Schoenbach were elected directors for one year.

Waste Paper Division

Robert F. Graham, of Boston, presided over an important meeting of the Waste Paper Division on Tuesday morning. It partook of the nature of a symposium on the whys and wherefores of the lamentable state of business and agreed tacitly on two things, that over-production of waste paper, aided by the greater use of kraft products in the place of board made from paper stock, and faulty buying methods, are the fundamental ills of the business apart from any general depression affecting all lines of industry.

It was announced that a proposal is to be made to the Board of Directors permitting local associations in various sections and cities to affiliate themselves voluntarily with the National association and cooperate with it. The waste paper problem is largely a local one and must be handled in that manner. The problem differs in each large city. In New York efforts to educate the dealers in improving their packing which automatically would cut production 20 per cent by eliminating a large amount of rubbish now packed and shipped in waste paper bales, and some work at cost accounting adoption.

Six large dealers in Boston have set about eliminating the surplus in part by the simple process of trucking all their collections for a period to a dump, declared Mr. Graham. Six hundred or more tons in this pile are to be burned before Pathe and Paramount camera news reel men to provide visual evidence of the state to which this important industry has fallen. The idea was highly commended as an object lesson to the public and consumers of waste paper who do not appreciate the packer's precarious position.

The chairman read communications from the Paper Board Industries Association, the Robert Gair Company, and others, admitting the state of the industry, and pointing out that it was a condition beyond anyone's control that must work itself out by natural means.

A standing committee was provided at this meeting to gather statistics and work for the good of the industry. William R. Bulger, of the Great Lakes Paper Stock Company was elected chairman for the ensuing year.

Annual Banquet Highly Successful

The seventeenth annual banquet of the association was held in the grand ball room of the Hotel Astor on Wednesday evening, March 19, and attracted several hundred members and guests. The new president, Carlton B. Overton, occupied the chair and proved a popular and efficient presiding officer. Communications from Charles M. Schwab and Henry Lissberger regretting their inability to attend and expressing their good wishes for the welfare of the association, were read.

Floyd Gibbons, author and war correspondent of international fame, gave an intensely interesting address, during which he related a number of amusing incidents in his career. He spoke in great length of his many exciting experiences in different quarters of the globe. Mr. Gibbons paid a great tribute to the late Lord Balfour and spoke feelingly of his work for the peace of the world. He also discussed the Naval Arms Conference in a comprehensive manner.

Sir Frederick McGill, a distinguished visitor from Great Britain, gave an interesting and instructive address. The subject of his discourse was "America As I Have Seen It." During his talk he convulsed the gathering with many humorous sidelights of his experiences in this country, and proved that he possessed a keen sense of humor.

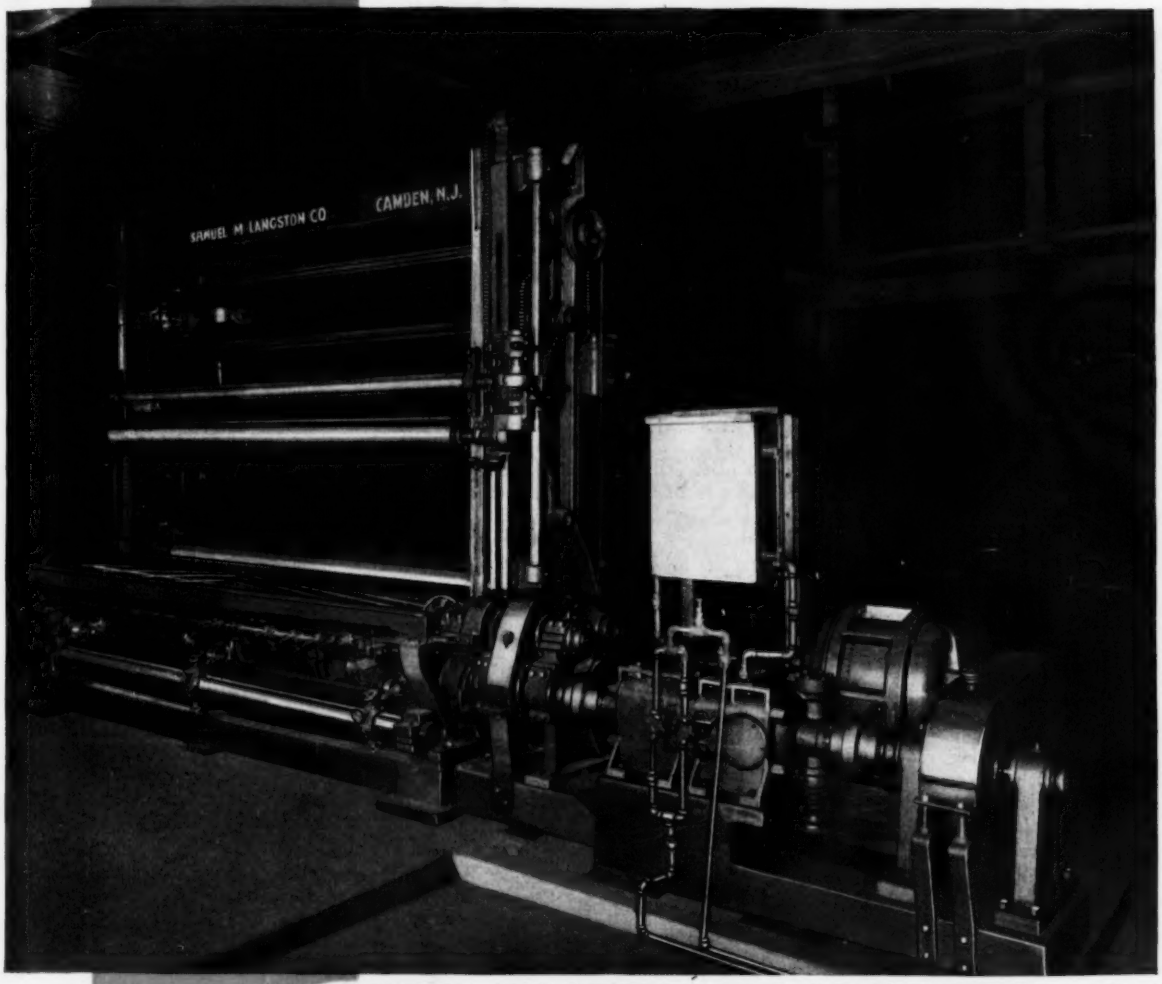
Lumber Camps Backward in Work

LOWVILLE, N. Y., March 24, 1930.—Although work in the lumber camps of the Gould Paper Company near here has not been completed because of the recent thaw and lack of snow for hauling the lumberjacks are coming out of the woods. It was planned to bring out 11,000 cords of wood this winter but the present weather condition makes this almost impossible. The winter has been an unusual one for lumbermen because of the many changes and frequent thaws.

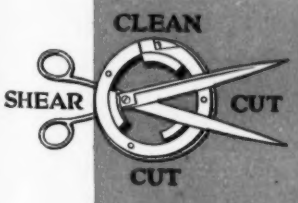
In the Racquette River Valley where a number of paper mills secure their pulpwood conditions have been somewhat better. Much of the hauling is now being done by tractors although camps in the Granshue section have been using teams. Practically all of the lumbering is being done by the Sisson-White Company and it is planned to float the wood down the river this spring, it being the first drive in several years.

In the vicinity of Meacham Lake in the Northern Adirondacks 63,000 cords of pulp logs have all been hauled to the water while all the pulp jobs on the former great Rockefeller preserve have been completed but one. Ten million feet of hardwood has been cut at Santa Clara for the Oval Wood Dish Company, of Tupper Lake, while another huge cut was made near Big Tupper Lake.

LANGSTON



SLITTERS



The heavy-duty Langston Slitter can be had in any width, to wind any diameter. Use it as a winder or as a rewinder. Speeds up to 3000 feet per minute. Makes rolls of uniform density, square-edged. Langston's Shear-Cut makes no dust—the paper is *clean-cut,* not ground apart. A catalog is yours for the asking.

SAMUEL M. LANGSTON CO., Camden, N. J.

VIEW OF PUGET SOUND PULP & TIMBER CO., EVERETT DIV., TAKEN FEBRUARY 5.

Puget Sound Rushes Work on Everett Division

Two views are presented herewith of the new 175 ton bleached sulphite mill of the Everett Division of the Puget Sound Pulp & Timber Company, Everett, Wash.

View No. 1, taken February 5, 1930, shows the office and laboratory building on the left; pulp mill in center; dock in right center background and the log cutup mill on the right.

View No. 2, taken March 10th; shows first shipment of machinery arriving by deep sea steamer and unloading at the company dock; pulp mill in right background; pulp warehouse in right foreground.

The first digester—out of the five being erected in this first unit of the Everett Division—has been tested and is being lined. Framework for the main mill buildings and power house has been completed and machinery is being installed as rapidly as it arrives.

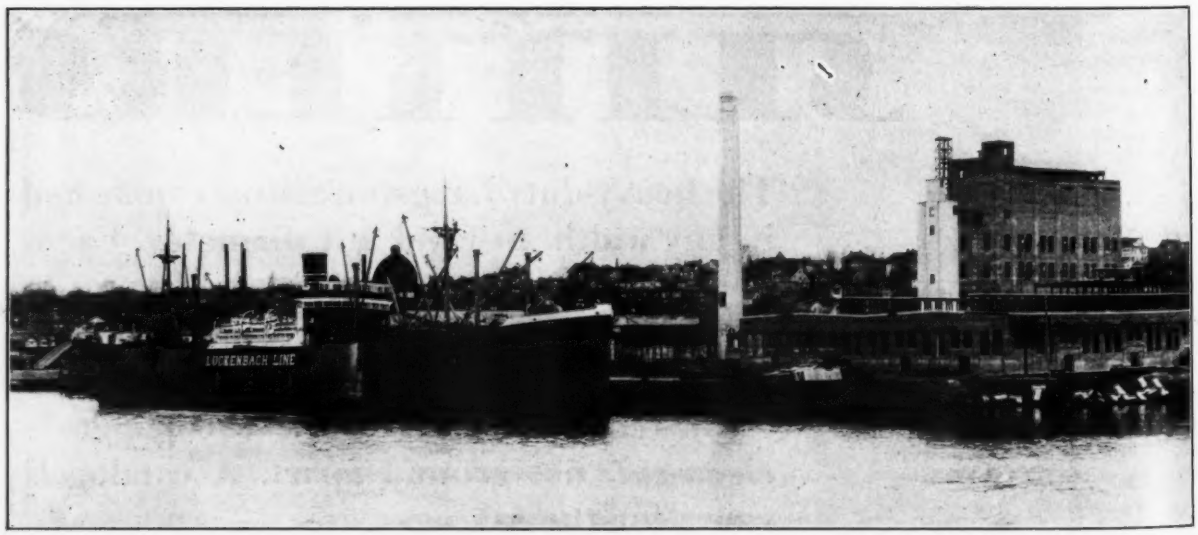
This mill will work on selected timber cut in the company's own forests; the average log furnished this mill being 40 feet long and 12 to 40 inch diameter. Square cants will be cut from these logs and only the clean wood being used in the pulp production, the slabs going into other use. The utmost care to produce uniformity is exercised from the selection of the trees in the woods to the cut up mill through the chippers and chip bins and into the digesters. The digesters are so designed that a long mild cook can be given. The liquor will be drained off before the stock is discharged into the blow pits. The brown stock chests are designed to hold a blend from five digesters, and many like items installed so as to make for uniformity of the finished pulp.

According to the present construction schedule the Everett Division mill will be in operation late the coming summer. Mean time the production from the Fidalgo and San Juan Divisions has been stepped up and a large tonnage of unbleached sulphite is being turned out of each mill. The big lumber operations at the Clear Lake Division have been going full blast for several months and large crews are working in the woods.

W. G. Kimball Dead

Warren Glentworth Kimball, treasurer of the Manufacturers Paper Company, 122 East 42nd street, New York, passed away at his home at Summit, N. J., March 25. Mr. Kimball had spent practically all of his business life with the Manufacturers Paper Company, and had been its treasurer for forty years. This long connection with the trade gave him a wide acquaintance, by whom he was held in high esteem on account of his lovable nature.

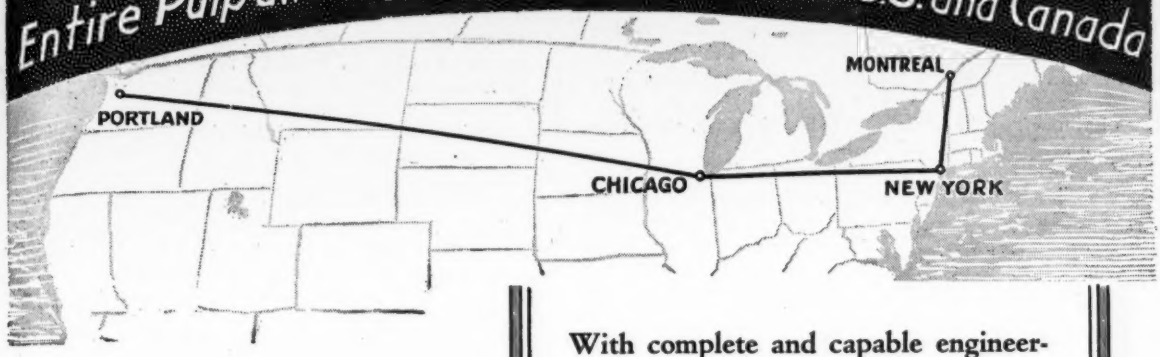
He is survived by one daughter, Lois, by three sons, Thomas G., Rodney A., and Rawson J. Kimball, and five grandchildren. Funeral services will be held Friday afternoon at Calvary Episcopal Church, Summit, N. J.



VIEW OF PUGET SOUND PULP & TIMBER CO., EVERETT DIV., TAKEN MARCH 10

Ross Service

Always at the Command of the Entire Pulp and Paper Industry in the U.S. and Canada



- Ross-Briner Economizer.
- Ross-Grewin High Pressure Machine Ventilating System.
- Ross-Baxter Grinder Exhaust System.
- Ross Vapor Absorption System.
- Ross-Wagner Recovery Furnace.
- Ross Systems for Machine Rooms, Beater and Storage Rooms.
- Ross Drying and Conditioning Systems.
- Calender Cooling.
- Locker Room Ventilation.
- Loft Drying.
- Trim Conveying.
- Felt Drying.
- Motor Cooling.
- Unit Heaters.
- Filters — Fans.
- Machine Hoods.
- Plate and Sheet Metal Work.

With complete and capable engineering service, available through its 4 offices; quick dependable manufacturing and delivery service from two plants, the Ross organization is the logical source of supply for many kinds of pulp and paper mill equipment.

This service has been planned to meet all requirements, large and small; to function promptly and completely for the mill room requiring a single unit heater as well as for the machine room requiring a complete heating and ventilating system.

Such a service naturally provides extra economies for you resulting from prompt shipment and installation plus full assurance of the utmost in the quality and operating efficiency of the apparatus you order.

J. O. ROSS ENGINEERING CORPORATION

208 W. Washington Street, CHICAGO
Main Office—122 E. 42nd Street, NEW YORK
519 American Bank Bldg., PORTLAND, ORE.

ROSS ENGINEERING OF CANADA, LIMITED

NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

New York Trade Jottings

H. P. Gould, president and treasurer of the Gould Paper Company, of Lyons Falls, N. Y., was a New York visitor last week.

* * *

Milton L. Smith, of the News Print Service Bureau, New York, has returned to duty completely recovered from a recent operation for appendicitis.

* * *

John D. Rue, engineer of the News Print Service Bureau, New York, who is a graduate of Princeton University, Princeton, N. J., returned to his *alma mater* to receive the key of Phi Beta Kappa.

* * *

Hans Lagerloef, of the Lagerloef Trading Company, wood pulp importers, New York, will show his specialized collection of Monaco postage stamps at the next meeting of the Collectors' Club, to be held on Wednesday evening, April 2, at 51 West 48th street, New York.

* * *

The James Slip Paper Stock Company, of which Frank Trezza is the proprietor, has moved from 563 Water street, New York, to 194 North Fourth street, Brooklyn, N. Y., where it has a modern and fully equipped warehouse. The company packs waste paper, specializing in heavy books and magazines and ledger stock.

* * *

Morgan Parker, president of the Bard Parker Company, New York, gave an interesting and instructive address on the Retail Price Maintenance Bill at the regular luncheon and meeting of the New York Division of the Salesmen's Association of the Paper Industry, held at the Fraternities Club last Monday. There was an excellent attendance.

* * *

W. L. Jones, Inc., paper and twine merchants, of 96-98 Prince street, New York, has taken over the business of the late W. L. Jones, who died November 6, 1929, while on a hunting trip in Canada. The late Mr. Jones had been in business for 43 years, and his son, Clinton P. Jones, who heads the recently formed corporation, has been associated with his father for about twenty years.

* * *

E. J. Keller, of the E. J. Keller Company, Inc., 200 Fifth avenue, New York, was elected chairman of the Foreign Trade Division of the National Association of Waste Material Dealers at a brief meeting of that group called only to elect a chairman for the ensuing year. Mr. Keller succeeds Carlton B. Overton, of Castle & Overton, Inc., New York, the newly elected president of the association.

Mrs. E. E. Wright Killed In Georgia

A dispatch from Savannah, Ga., states that Edward E. Wright, president of the Miller & Wright Paper Company, of 200 Varick street, New York, was injured in an automobile collision near Lyons, Ga., on Monday, March 24. His wife was unfortunately killed.

Mrs. Wright was about sixty years of age and was born in Brooklyn, N. Y., the daughter of the late T. W. Taylor. She is survived, besides her husband, by a daughter, Mrs. George P. Nichols, of 106 East 85th street, and a grandson, George Edward Nichols, a student at Princeton University.

Luzerne Employees To Receive Wages

[FROM OUR REGULAR CORRESPONDENT]

LUZERNE, N. Y., March 24, 1930.—Forms have been sent to employees of the Luzerne Paper Mill, which went into bankruptcy last summer, in order that they may receive wages due them. After being filled out by the employees they were sent to the receiver of the firm in Schenectady where their claims are being filed.

Improved Demand in Indianapolis

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 24, 1930.—While some improvement is noted here in demand for various grades of paper, the demand is nothing to boast about. Spring has not opened as actively as the jobbers expected, though there are inquiries which give hopes of better times. The volume of business during the first three months of this year will show just about the volume of the same period last year. Of course, the jobbers expected more.

Such papers as are manufactured in this state, mostly board and fibers, seem to have a fair demand, judging from the production at the various factories, which appears to be a little ahead of that of last year. Most of the factories report a fair volume of orders on file and some fair inquiries.

News print demand is not what it should be, though lineage is slowly increasing. This is particularly true of the larger papers, where early spring advertising has been a disappointment. The rural papers seem in better shape and the volume in those localities varies but little from last year.

Paper stock demand is a trifle better. Prices have improved a little and the local houses report a more active demand for their products. Buildings papers are more in demand, but the spring has not brought the volume expected. It is possible, however, that the late spring demand will improve and be better than last year, for there is considerable work in prospect in this section.

Credit conditions are not much changed and would be classed as poor. The users say they can not collect their bills and therefore can not pay the jobbers. As a result more and more C.O.D. business is being done.

E. A. Hall Heads Michigan-United Paper Co.

MUSKEGON, Mich., March 24, 1930.—The directors of the Michigan-United Paper Company, of Muskegon, Mich., have announced the election of Edgar A. Hall, Jr., as president and managing director, effective at once. Mr. Hall will have his office in Muskegon.

The Michigan-United Paper Company are manufacturers of waterproof papers. Their products are widely diverse in quality, put-ups and price, due of course to the varied purposes for which paper of this character is used.

One of the unusual advantages that this company enjoys is its ability to "custom make" a particular paper for a particular purpose that will exactly fill its requirements.

Experiments are constantly being made to develop new products for standard uses that will conform to the required needs better and with greater economy than do waterproof papers heretofore offered.

Mr. Hall has stated that at an early date the sales policy of the company will be announced, and that it will be constructive and will probably embody a suggested re-sale price consistent with the needs of the merchant whose problem he knows so well. He further stated that no orders were too small to receive the careful attention and prompt service that orders of large volume receive as a matter of course, it being the desire of this company to thus be equally helpful to its small and large distributors.

While the Michigan-United Paper Company manufactures only waterproof papers at present, its program includes the development of other specialties profitable to the paper merchant.

Mrs. R. S. Kellogg Wins Landscape Prize

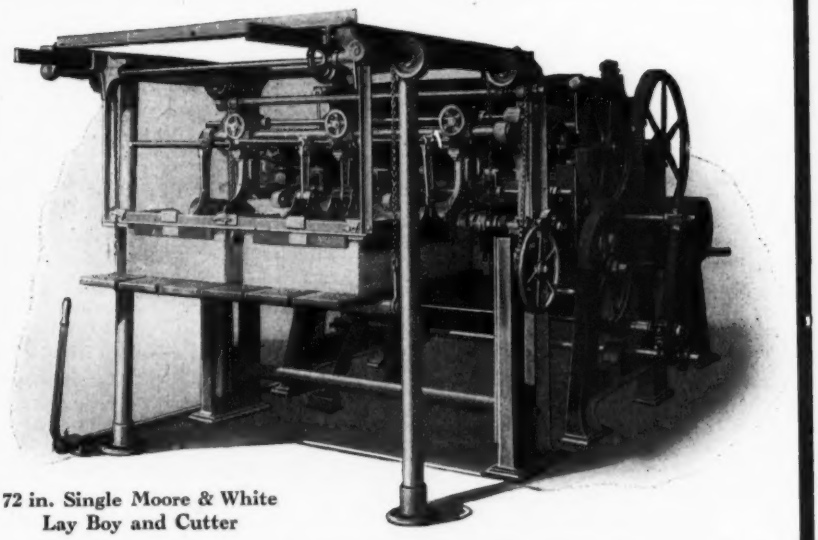
Janet Reid Kellogg, wife of Royal S. Kellogg, secretary of the News Print Service Bureau, has been awarded the Helen K. McCarthy memorial prize of $250 for a landscape painting at the annual exhibition of the National Academy of Design, which is now being held at 215 West 57th street, New York. The award is for "The most meritorious landscape painting in the exhibition by a lady not over forty years of age." The painting represents San Gimignano Piazza.

"M & W" Lay Boys

Over 1000 "M & W" Lay Boys for laying all kinds of paper, are in operation in connection with all makes of Cutters in finishing rooms or on end of paper machines. By the use of a Lay Boy the cutting expense is reduced considerably as these machines will increase the output of any Cutter.

One operator can handle any number of piles and in some cases one operator runs two or more Cutters, as their operation is automatically controlled.

The space required for the Lay Boy is no more than for the table formerly used in connection with Cutters. Wax and Glazed and Curly Papers successfully handled. Lay Boys can be had for Single, Duplex or Diagonal Cutters.



72 in. Single Moore & White Lay Boy and Cutter

. . . ADVANTAGES

Increased Production—Operates Automatically—Paper Piled Straighter—Saves Labor and Finished Paper—Can be attached to any make of Cutter—Present Trucks can be utilized.

Makes the use of Wide Cutters desirable at High Speed operation—A Trial will convince you—Trial orders accepted—Literature upon request.

THE MOORE & WHITE CO., NORTH PHILA. STATION PHILADELPHIA, PA.

PAPER · MACHINE · BUILDERS

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Lynn, Mass.—The Hoague-Sprague Corporation, manufacturer of cardboard boxes and containers for shoes, etc., is arranging an expansion program for large increase in present output. It is proposed to establish new branch plants at Manchester, N. H., and Auburn, Me., at an early date, primarily to serve footwear manufacturing plants at those centers, each reported to cost over $40,000, with equipment. Other branch factory units are contemplated in the near future. The company has concluded negotiations for the purchase of the Fellows Box Company, with plants at Lynn, and Kingston, N. H., and the box-manufacturing division of A. G. Walton & Company, shoe manufacturers, located at Chelsea and Lawrence, Mass., and will consolidate these units with its organization. It is understood that factories will be maintained at the two last noted places to furnish cardboard containers for the Walton company, as well as other shoe producers.

Raymond, Wash.—The Willapa Pulp and Paper Mills, Inc., Pacific Building, Portland, Ore., is said to be arranging to break ground early in April for its proposed new pulp mill at Raymond, to be equipped for an initial output of about 75 tons per day, reported to cost over $450,000, with equipment. It is understood that the unit will be ready for service in the fall. The British-American Consolidated Properties, Ltd., Portland, is said to have acquired a controlling interest in the Willapa company.

Indianapolis, Ind.—The Zimmer Paper Products Company, recently organized, has established a new plant in the building at Nineteenth street and Martindale avenue, for the manufacture of waxed paper goods, for the wrapping of food products, etc., and kindred processed stocks. The initial plant occupies about 10,000 square feet of floor space, and will be operated at once on a 24-hour production schedule. The company is planning an early expansion program to provide for a second complete operating unit. Karl B. Zimmer heads the company.

Utica, N. Y.—The Walrath-Dorn Paper Company, Inc., care of Frank H. Walrath, 120 Elmdorf avenue, Rochester, N. Y., recently organized by Mr. Walrath and associates with a capital of $50,000, is said to be planning early operation of a factory at Utica for the production of paper specialties. Lester A. and Sidney L. Dorn, 31 South William street, Johnstown, N. Y., are interested in the new company.

West Point, Va.—The Albemarle-Chesapeake Company, Inc., West Point, has arranged for a bond issue of $500,000, the fund to be used in connection with the construction of new local mill of the company, now in progress. The plant will be equipped for the manufacture of kraft paper and board specialties and is expected to represent a total investment of about $1,500,000. H. W. Ellerson is president; Elis Olsson is general manager.

Boston, Mass.—Walter S. Barnes & Son, Inc., 33 Farnsworth street, manufacturer of paper boxes and containers, has arranged for the removal of its plant to the building at 789-a Tremont street, where increased production facilities will be provided. Two floors will be occupied at the new location.

Leesburg, Fla.—The Lake Griffin Pulp and Paper Corporation, care of Mary J. Cassady, Tavares, Fla., recently organized with capital of 500 shares of stock, no par value, is considering plans for an initial plant in the vicinity of Leesburg, for the manufacture of pulp and paper, using saw grass as source of raw material. The company has made application to the Internal Improvement Fund, Tallahassee, Fla., headed by Governor Carlton, for authority to take over and use State-owned saw grass lands for this purpose. Local property has been secured for the mill, which will consist of a number of units to develop large capacity. It is estimated to cost more than $1,000,000, with machinery. The company is also projecting plans for another mill of this same character at another location in the State.

Toledo, Ohio.—The Valve Bag Company of America, Toledo, manufacturer of heavy paper bags for cement, lime, plaster, etc., is arranging an expansion and improvement program to cost about $100,000, including the installation of considerable new equipment for increase in present output. It is understood that the work will be placed under way at once, and pushed to early completion.

Brooklyn, N. Y.—The Well-Made Paper Box Company, Inc., care of Charles Trepper, 1039 Newport street, Brooklyn, recently organized by Mr. Trepper and associates, is said to be planning the early operation of a local factory for the manufacture of paper boxes and containers. Henry Locke, 147 Fourth avenue, New York, is one of the incorporators.

Seattle, Wash.—The Gypsum Products Corporation, 6851 East Marginal way, has authorized an expansion and improvement program at its mill to cost approximately $150,000, to provide for considerable increase in present output. A contract has been let to the Wallace Bridge & Structural Steel Company, West Marginal way, for the erection of new plant unit, as well as for remodeling of existing structures.

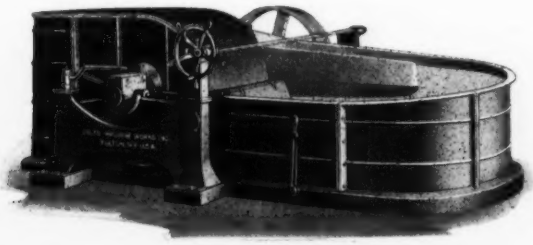
Three Rivers, Mich.—The Safe Service Egg Case Company, Fifth and Pleasant streets, recently formed with capital of 400 shares of stock, no par value, plans operation of a local plant for the manufacture of corrugated shipping and packing cases of various kinds. The new organization is headed by Oscar W. Frincke, Monroe, Mich.; and George T. Wolf, Three Rivers.

Detroit, Mich.—The establishment of the Globe Paper Company, occupying a portion of the five-story building at 113--15 West Jefferson avenue, was damaged by fire March 15, with loss reported in excess of $40,000.

Franklin, N. H.—The International Paper Company, New York, is arranging for the closing of its local pulp and paper mill on March 30, for a limited period. One unit of the plant has been shut down for a number of years. It is understood that the unit now being closed will resume in near future.

Munising, Mich.—The Munising Paper Company has approved plans for a new power plant at its local mill, reported to cost more than $45,000, with equipment, and will proceed with work at once. A general contract has been let to the C. R. Meyer & Sons Company, 50 State street, Oshkosh, Wis.

Kingsport, Tenn.—In connection with a general expansion program reported to cost close to $15,000,000, the Eastman Kodak Company, Kodak Park, Rochester, N. Y., has active work in progress on new mills for its subsidiary organization the Tennes-

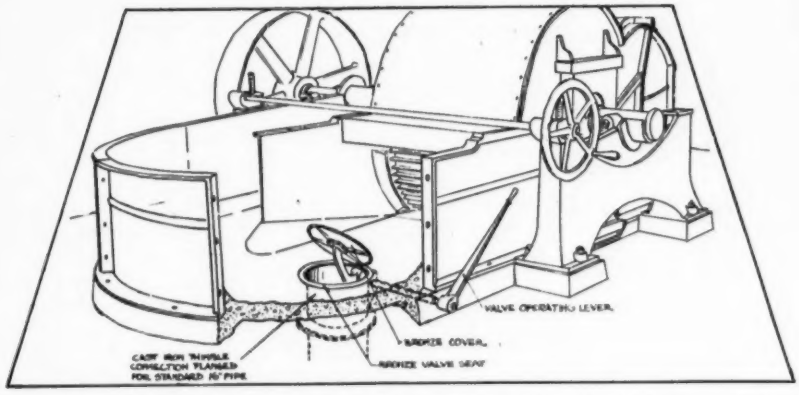


- WHY -

DILTS NEW TYPE BEATING ENGINES

mix more thoroughly, do their work faster and more economically than others.

This is the fourth of a series of advertisements, picturing some of the reasons—features, in design and construction—which make Dilts New Type Beating Engines most suitable for your Beater Room requirements . . . *Ask for additional data.*



DILTS QUICK DUMPING VALVE is made with Bronze Ring and Cover, and is operated by lever outside the tub. Ring and Cover are ground in together—the valve seats itself—no packing—no leaking.

DILTS MACHINE WORKS INC.
FULTON, N. Y.

"Your Paper Is Made In Your Beaters"

see-Eastman Company at Kingsport, Tenn. A portion of the plant is ready for service and other units, it is understood, will be pushed to rapid completion. The mill will be given over primarily to the production of cellulose acetate, and will represent an investment reported at $5,000,000, of gross amount noted.

New Companies, Etc.

Los Angeles, Cal.—In connection with a new unit at its mill, recently announced, to be used for emulsion service, the Pioneer Paper Company, 5500 South Alameda street, has filed plans for a new condenser and installation will proceed at once.

York, Pa.—Fire, March 17, destroyed the former mill of the Penn Fibre Board Company, comprising a group of six buildings. The property has not been occupied for some time past.

Eau Claire, Wis.—The Dells Paper & Pulp Company has filed plans for the construction of a new one-story addition to be used as a wood-washing department, estimated cost has not been announced. General contract for the structure has been let to the Hoeppner-Bartlett Company, 414 East Grand avenue, Eau Claire.

New York, N. Y.—The Seaman Box Company, Inc., has been incorporated with a capital of $15,000, to manufacture and deal in paper boxes and containers. The incorporators are David Pontak, Julius G. Kremer and Barney Seaman, 29 Ninth avenue, New York. The last noted will head the company.

New York, N. Y.—The Clark Loose Leaf Manufacturing Company, 65 Duane street, New York, manufacturer of commercial paper goods, has arranged for an increase in capital from 2,500 to 4,500 shares of stock, a portion of the proceeds to be used for general expansion and operations.

New York, N. Y.—The Arkadia Paper Products Corporation, 16 West Twenty-second street, has filed notice of increase in capital from $10,000 to $20,000, for general expansion.

Chicago, Ill.—The Delta Company, 1018 South Wabash avenue, has been organized to deal in paper goods of various kinds. The company is headed by Thomas P. Braid and LeRoy Winer.

New York, N. Y.—Auer & Melchior, Inc., has been incorporated with capital of 100 shares of stock, no par value, to deal in paper products. The incorporators are J. F. Auer, P. F. Melchior and H. L. Engstrom, 475 Fifth avenue, New York. The company is represented by Louis A. Shapiro, 1540 Broadway, New York, attorney.

New York, N. Y.—The Freedman Cardboard Company has been incorporated with a capital of 250 shares of stock, no par value, to manufacture and deal in cardboard and other paper specialties. The company is represented by L. L. Rosenberg, 10 East 40th street, New York.

Brooklyn, N. Y.—The Loose Leaf Products Corporation, 80 Washington street, has filed notice of company dissolution under state laws.

Springfield, Mass.—The Springfield Paper Stock Company, Inc., has been incorporated with a capital of 300 shares of stock, no par value, to deal in paper goods. Louis Leventhal is president and treasurer; Maurice Kimball, 114 Lowell street, Springfield, is representative.

C. M. Bolser Says Paper Firms Should Advertise

[FROM OUR REGULAR CORRESPONDENT]

WORONOCO, Mass., March 25, 1930.—C. M. Bolser, advertising manager for the Strathmore Paper Company, spoke on advertising before the Strathmore Club Wednesday night. He said that paper manufacturing companies are for the most part following the old lines and not advertising but that today every firm that is in business should advertise its product in order to get the largest volume of sales and the best possible price. He showed how the product was carried to the mill agent, salesmen, printers and finally the consumer and stressed the direct mail and correspondence as principal advertising factors. Sample books of great excellence containing many of the company's lines were described and mediums discussed.

Mead Pulp & Paper Co. Makes Good Report

[FROM OUR REGULAR CORRESPONDENT]

DAYTON, Ohio, March 24, 1930.—The Mead Pulp and Paper Company reported net profits for the year ending December 31, 1929, of $1,150,000, after all charges, compared with $828,780 in 1928.

The earnings of the Mead Paperboard Corporation and the Management Engineering and Development Company for 1929 available for dividends total $330,000.

Earnings for 1929 available for dividends on stocks of the constituent companies were in excess of $1,480,000. Based on results for the first two months of 1930, and on business now in hand, earnings for 1930 should show an increase of at least one-third to over $2,000,000.

This would be equivalent to $8 a share on present common stock of the Mead Pulp and Paper Company, which is to receive two shares of the Mead Corporation stock for each share now held.

Preferred stock dividends of the Mead Pulp and Paper Company in 1929 were earned over five times, and the preferred stock dividends of the Mead Corporation in 1930 should be earned over eight times, it is stated.

In view of the recent merger plans announced by the company, the above financial statement is of decided interest not only in this city where the company's principal offices are located and where George H. Mead was born and reared and brought up in a paper atmosphere as a member of a pioneer family of paper manufacturers, but in many other sections of the Miami Valley and the country in general.

To George H. Mead's genius as an organizer and to his ability as a manufacturer, is due much credit for the great advancement made by his numerous enterprises in this city, Chillicothe, Ohio, Kingsport, Tenn., and other Southern sections and in the wide open spaces or timber-locked sections of Canada, as the case may be.

Morey Paper Mill Supply Co. Enlarge Staff

BOSTON, Mass., March 24, 1930.—The Morey Paper Mill Supply Company, 38 Chauncy street, Boston, announces two recent additions to its staff. H. W. Server, until recently general superintendent of the Oxford Miami Paper Company, West Carrollton, Ohio, has been appointed resident agent in the territory comprising the states of Ohio, Indiana, Virginia, West Virginia, and the South. He will make his headquarters at 321 Dixie avenue, Dayton, Ohio. Frank H. Preble, formerly with the Diamond Mills Paper Company, New York City, will cover the New York and New England territories.

J. E. Rhoads & Sons, of Philadelphia, manufacturers of Tannate Watershed Leather Belting, Belt Dressing, etc., have recently appointed the Morey Paper Mill Supply Company, of Boston, as sales agents to the paper and pulp industry. The Morey Paper Mill Supply Company, whose staff is familiar with the needs and requirements of the industry, will bring J. E. Rhoads & Sons in closer touch with a very important part of their clientele and enable them to render more intelligent and efficient service.

Julian Miller Dead at Carthage

CORINTH, N. Y., March 24, 1930.—A few minutes after complaining of illness Julian Miller, superintendent of the sulphite department of the International Paper Company, dropped dead in the yards of that company. Physicians who were summoned attributed his death to heart disease. Mr. Miller was conversing with an employee when he suddenly complained of illness and remarked that he was going to the medical department to secure a stimulant. He had not reached the first aid room when he dropped to the ground, being dead before employees could reach him. He was very prominent in fraternal circles. The survivors included his widow and one daughter.

FACTS

HAVE REPLACED FANCY

THE facts are all before you when you consider the purchase of Penberthy Paper Drier Equipment. An engineering survey has determined your present operating costs and conditions—our written proposal then guarantees definite savings when you install the Penberthy Equipment. This guarantee is based upon the results of many machines making all kinds of paper.

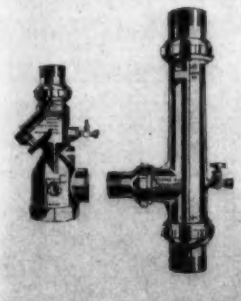
A second survey determines the actual savings after the Penberthy Drier Equipment is in service. These surveys are made without expense or obligation to you. They are supervised and approved by your engineers.

You pay for Penberthy Paper Drier Equipment out of the savings it is guaranteed to make irrespective of your present drying system. The Penberthy Equipment usually pays for itself within a year.

Wire or write for details.

PENBERTHY INJECTOR COMPANY
Established in 1886 DETROIT Canadian Plant, Windsor, Ont.

GRADUATED



DRYING

PENBERTHY PRODUCTS

PENBERTHY PAPER DRYING EQUIPMENT

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending January 31, and for the Six Months Ending December 31, 1929 as Compared with Corresponding Month of Previous Year

IMPORTS—PAPER

	January				Six Months Ending December 31			
	1929		1930		1929		1930	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and Manufactures		13,611,314		13,348,768		80,471,571		85,879,083
Printing paper—								
Standard newsprint ...free..lbs.	393,764,440	12,147,619	397,239,819	11,675,042	2,245,982,456	71,862,360	2,581,969,988	76,022,245
Imported from—								
Finland ...lbs.	6,197,948	156,815	7,902,309	183,017	44,265,185	1,124,685	35,828,890	854,873
Germany ...lbs.	1,549,290	38,398	1,655,470	43,699	9,914,927	271,291	10,576,686	253,198
Norway ...lbs.	387,731	10,304	596,429	11,978	13,084,688	358,856	2,476,856	64,902
Sweden ...lbs.	7,636,989	200,601	13,395,605	336,162	62,216,868	1,626,671	55,954,985	1,417,173
Canada ...lbs.	351,845,525	11,013,954	343,210,851	10,218,547	1,946,782,739	63,203,366	2,293,675,675	68,257,205
Newfoundland and Labrador ...lbs.	26,146,957	727,511	30,479,155	811,639	169,649,383	5,275,370	183,421,048	5,173,913
Other countries ...lbs.	.....	.....	.....	.....	68,666	2,121	35,848	981
All other, n. e. s. ...dut..lbs.	366,189	15,844	177,730	7,824	3,371,396	155,181	2,129,929	116,089
Grease-proof and water-proof papers ...dut..lbs.	171,095	31,530	179,405	63,492	715,402	120,978	1,080,454	314,392
Kraft wrapping paper ...dut..lbs.	866,906	36,551	971,103	39,481	7,594,448	325,044	5,184,927	225,825
Other wrapping paper ...dut..lbs.	480,893	11,915	180,342	9,461	7,162,247	200,720	3,470,375	117,732
Writing, letter, drawing, etc., papers...dut..lbs.	261,366	69,230	380,561	87,827	1,680,257	450,383	1,649,050	499,066
Surface-coated paper ...dut..lbs.	224,682	94,688	207,026	73,486	1,267,349	579,880	1,095,606	479,169
Tissue, copying, etc., papers ...dut..lbs.	327,160	156,594	387,097	207,549	2,041,592	1,092,282	2,786,644	1,478,776
Paper boards, n. e. s.—								
Pulp boards in rolls ...dut..lbs.	4,458,617	104,471	3,981,347	94,655	23,668,776	505,377	27,639,923	582,228
Pulp boards, pulp board, and card-board ...dut..lbs.	2,002,313	45,277	1,101,327	27,093	9,683,461	214,789	8,489,903	212,673
Leather board, test and wall board ..dut..lbs.	162,750	6,138	131,345	5,781	333,646	12,680	1,187,003	52,037
Cigarette paper, cigarette books, and covers ...dut..lbs.	912,472	295,348	1,255,643	433,136	5,677,328	1,578,705	6,240,787	2,143,348
Hanging paper (wall paper) ...dut..lbs.	310,808	78,354	352,413	92,231	883,070	288,094	1,534,493	365,248
Duplex, decalcomania paper, not printed .free..lbs.	46,836	10,468	65,035	15,530	284,829	61,781	227,358	54,654
Paper boxes ...dut...	.....	121,033	.....	123,414	.....	918,981	.....	891,854
Pulp or papier-mâché and manufacturers, n. e. s. ...dut.....	.....	115,160	.....	82,636	.....	203,577	.....	288,307
All other paper and manufacturers ....dut...	.....	271,094	.....	310,130	.....	1,900,759	.....	2,035,438

WOOD PULP

Mechanically ground wood pulp ...free..tons	23,064	584,859	25,378	738,750	111,091	2,713,582	132,634	3,419,179
Sulphite wood pulp ...tons	106,404	6,230,112	113,538	6,456,743	508,931	30,168,264	541,831	31,657,536
Unbleached ...free..tons	74,031	3,841,744	87,116	4,487,831	346,531	17,808,890	375,623	19,027,618
Bleached ...free..tons	32,373	2,388,368	26,422	1,968,912	162,400	12,359,374	166,208	12,629,918
Imported from—								
Finland ...tons	10,058	493,896	6,885	346,630	44,837	2,099,611	59,358	2,881,735
Germany ...tons	7,934	526,295	5,382	362,712	34,885	2,323,199	30,689	2,146,842
Sweden ...tons	4,510	283,248	5,463	377,986	30,003	1,994,859	27,399	1,857,834
Norway ...tons	50,615	2,847,728	61,666	3,329,399	203,928	11,383,781	215,593	11,856,939
Canada ...tons	30,629	1,925,756	33,008	1,980,584	177,310	11,353,217	196,920	12,284,378
Other countries ...tons	2,658	153,189	1,134	59,432	17,968	1,013,597	11,872	629,808
Sulphate wood pulp, unbleached (kraft pulp) ...free..tons	27,201	1,501,945	38,136	1,995,649	233,505	12,867,593	216,964	11,345,266
Imported from—								
Finland ...tons	2,301	114,715	1,703	76,730	13,596	649,436	14,793	705,327
Norway ...tons	625	33,593	536	26,101	8,215	462,612	8,740	436,636
Sweden ...tons	14,377	750,514	27,910	1,406,108	136,511	7,166,651	134,975	6,708,736
Canada ...tons	8,871	556,377	7,496	461,392	72,807	4,479,158	55,800	3,275,615
Other countries ...tons	1,027	46,746	491	25,318	2,376	109,736	2,656	118,952
Sulphate wod pulp, bleached ...free..tons	855	69,402	1,100	94,324	8,956	546,355	7,290	538,976
Other pulp ...free..tons	576	42,087	318	24,270	4,197	270,771	3,134	281,140

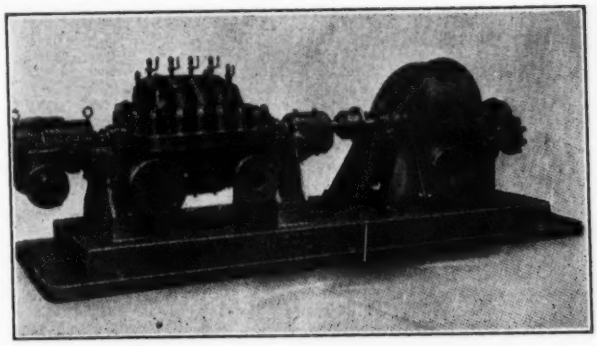
CRUDE PAPER STOCK

Rags for paper stock ...free..lbs.	36,664,383	671,761	38,857,066	783,429	229,695,094	4,288,049	234,766,184	5,073,437
Waste bagging, waste paper, etc. ...free..lbs.	12,505,554	152,276	10,986,056	126,017	75,824,889	910,864	69,688,263	785,440
Old rope and all other paper stock ....free..lbs.	6,840,732	238,995	8,063,115	204,265	39,392,019	1,178,878	74,421,460	1,731,685

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS

Colors, dyes, stains, color acids, and color bases, n. e. s. ...dut..lbs.	551,275	617,648	441,222	484,078	3,180,003	3,554,722	3,416,010	3,665,574
Imported from—								
Belgium ...lbs.	1,732	2,292	1,984	1,767	43,390	59,632	46,396	57,489
France ...lbs.	3,526	4,578	1,025	1,028	30,892	36,017	44,931	72,556
Germany ...lbs.	367,485	405,065	350,198	393,177	2,056,919	2,218,954	1,719,733	1,715,490
Italy ...lbs.	880	1,234	.....	.....	20,253	18,739	8,819	7,013
Switzerland ...lbs.	165,704	192,388	83,148	82,445	877,453	1,063,675	1,527,607	1,739,332
United Kingdom ...lbs.	8,014	7,874	4,799	5,508	39,991	40,997	48,416	50,780
Other countries ...lbs.	3,934	4,217	68	153	111,105	116,708	20,108	22,914
Casein or lactarene ...dut. lbs.	2,938,376	335,943	1,552,994	211,520	12,947,657	1,595,505	9,320,620	1,142,512
Kaolin, china, and paper clay ...dut. tons	21,693	232,075	13,534	146,628	139,985	1,547,299	112,170	1,204,450

(Continued on page 46)



A Warren 4-in. five stage centrifugal boiler feed pump for feeding boilers against 500 lbs. working water pressure, installed at Southern Advance Bag and Paper Co.

How many times have you paid for your pumps?

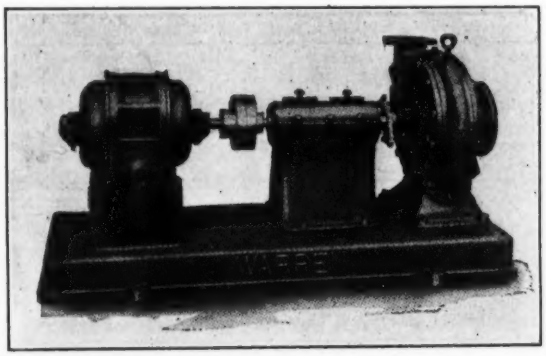
You paid for them once,—since then, how many times have you paid for them *over again* in repair parts, labor, slowed up production and idle equipment?

Operating records of pulp and paper mills show unusually low maintenance costs for Warren pumps.

Liberal clearances maintain the pumps' original efficiences over a long period of time; shafts extra large at impeller and bearings prevent vibration and deflection and tongue and groove construction eliminate bolts or pins liable to work loose and cause trouble.

Stuff pumps built by Warren handle 6% clean stock smoothly, efficiently and without clogging.

Built to give the user the lowest possible cost per year. Warren pumps will cut your maintenance and repair costs to an absolute minimum. Bulletins or estimates?



Warren Stuff Pump, built to handle 6 clean stock smoothly, efficiently and without clogging.

Warren

Steam Pump Company Inc. WARREN **Warren Massachusetts**

Agencies in All Principal Cities

3739

PAPER AND PAPER STOCK IMPORTS AND EXPORTS OF THE UNITED STATES

(Continued from page 44)

EXPORTS—PAPER

		January				Six Months Ending December 31			
		1929		1930		1929		1930	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Paper and Manufactures			3,503,749		3,434,249		15,611,436		18,255,789
Printing paper—									
Newsprint paper	lbs.	3,405,310	122,745	3,939,159	104,237	12,305,403	465,487	20,361,084	715,275
Exported to—									
Europe	lbs.			51,708	1,335	7,762	379	627,534	38,697
Canada	lbs.	80,508	4,007	2,272	153	109,133	5,702	324,582	16,494
Central America	lbs.	157,660	5,493	196,410	7,197	689,108	24,267	1,196,267	43,956
Cuba	lbs.	353,176	12,558	397,114	17,112	1,536,667	57,812	1,789,343	65,361
South America	lbs.	867,138	30,647	1,169,600	37,385	3,168,733	124,304	10,390,560	338,877
China, Hong Kong, and Kwantung	lbs.	486,620	16,244	212,065	7,986	2,811,085	104,296	1,183,002	41,219
Philippine Islands	lbs.	1,402,048	51,622	823,039	28,064	3,130,827	117,010	3,940,352	130,700
Other countries	lbs.	58,210	2,172	86,551	5,005	852,088	26,717	909,444	39,971
Book paper, not coated	lbs.	4,849,374	318,942	5,028,459	619,433	12,344,051	890,050	18,771,297	1,314,110
Exported to—									
Europe	lbs.	255,403	19,377	163,760	13,637	312,003	31,929	597,907	73,637
Canada	lbs.	1,322,258	76,654	1,054,434	64,783	4,598,996	274,354	5,639,193	327,137
Mexico	lbs.	37,221	3,913	112,073	10,576	252,273	25,383	267,365	29,180
Cuba	lbs.	281,837	19,340	433,809	29,673	2,360,195	167,335	2,867,412	196,555
Argentina	lbs.	237,982	21,734	176,378	11,831	358,178	29,324	547,452	46,626
Other South America	lbs.	14,289	12,458	209,840	16,300	633,439	53,334	685,114	59,513
China, Hong Kong, and Kwantung	lbs.	1,810,318	108,777	1,701,591	395,117	877,238	69,646	4,855,773	296,186
Philippine Islands	lbs.	417,881	29,702	665,687	42,339	1,541,560	97,569	1,933,457	137,810
Australia	lbs.	93,414	13,995	103,454	8,647	574,141	71,826	403,837	67,644
Other countries	lbs.	140,711	13,292	407,433	26,530	836,028	69,350	973,787	79,822
Cover paper	lbs.	205,117	37,566	191,876	30,599	938,370	158,546	1,029,047	181,888
Grease proof and waterproof paper	lbs.	278,237	42,789	234,279	40,392	1,620,619	262,521	1,538,841	272,925
Overissue and old newspapers	lbs.	12,310,982	134,324	9,265,633	93,147			83,367,219	865,294
Wrapping paper	lbs.	4,240,079	304,000	5,291,642	332,968	18,971,796	1,298,036	22,384,592	1,474,261
Surface-coated paper	lbs.	1,804,345	170,475	1,166,517	110,858	6,717,684	625,373	7,939,031	728,815
Tissue and crêpe paper	lbs.	450,766	101,777	438,376	79,722	2,217,979	522,651	2,608,819	585,058
Toilet paper	lbs.	532,487	59,863	801,975	86,853	3,688,324	376,103	3,459,301	384,758
Paper towels and napkins	lbs.	294,584	36,681	423,346	46,316	1,701,264	231,331	1,937,038	236,784
Box board, paper board and strawboard	lbs.	5,686,357	146,623	7,859,145	195,831	23,339,490	628,988	25,891,714	691,348
Bristols and bristol board	lbs.	286,870	25,699	462,289	31,743	991,780	113,482	1,320,363	135,831
Other paper board	lbs.	3,200,115	158,817	3,810,091	198,844	22,638,886	1,176,709	26,590,598	1,110,010
Sheathing and building paper	lbs.	1,581,132	57,904	1,490,524	58,480	8,489,467	312,157	10,061,506	329,385
Fiber insulating lath or board	sq. ft.	575,077	23,805	5,061,814	173,583			18,975,405	657,303
Wall board of paper or pulp	sq. ft.	6,360,350	190,066	1,743,749	60,802	35,693,628	1,206,684	35,292,506	1,149,639
Blotting paper	lybs.	398,069	45,831	294,921	34,326	1,823,600	206,487	1,663,917	205,091
Filing folders, index cards, and other office forms	lbs.	128,593	54,472	144,536	53,348	727,499	250,626	815,302	297,062
Papeteries (fancy writing paper)	lbs.	39,969	11,383	47,617	10,443	404,532	118,451	543,121	123,000
Other writing paper	lbs.	3,177,688	326,358	1,880,296	199,259	13,848,780	1,430,813	13,047,789	1,377,025
Paper hangings (wall paper)	roll		68,180	345,861	58,862		248,879		182,618
Paper bags	lbs.	1,070,362	89,622	882,064	77,990	4,876,673	404,814	6,366,955	508,455
Boxes and cartons	lbs.	2,380,744	159,311	1,659,729	100,268	15,383,964	1,039,870	12,963,110	919,905
Envelopes	lbs.	154,136	27,857	183,041	34,570	1,219,692	200,694	1,194,835	217,483
Vulcanized fiber sheets, strips, rods and tubes	lbs.	576,258	146,566	464,086	107,596	2,813,264	729,163	2,882,583	687,634
Cash-register and adding-machine paper	lbs.	595,365	53,901	493,113	42,839	2,113,410	218,419	3,053,907	281,164
Other paper and paper products			587,592		451,040		2,495,102		2,623,668
WOOD PULP AND PAPER STOCK									
Sulphite wood pulp	tons	3,859	191,662	2,538	133,786	12,209	731,680	16,228	930,973
Soda wood pulp	tons	122	10,031	352	27,790	1,259	100,709	1,012	83,957
Other wood pulp	tons	409	34,257	1,372	57,495	3,987	206,675	3,931	233,899
Rags and other paper stock	lbs.	11,303,166	183,287	7,535,343	296,265	110,670,946	1,783,385	47,958,578	753,104
PAPER AND PULP MILL MACHINERY									
Paper and pulp mill machinery			285,331		235,947		1,363,384		2,308,854

Zimmer Paper Products Starts

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 24, 1930.—The Zimmer Paper Products factory, a new industry in Indianapolis, manufacturing waxed paper products such as bread wrappers and other preservative wrappers, has been established at the Indianapolis Industrial Center, 1450 East Nineteenth street. Announcement of the new industry was made by officials of the Indianapolis Chamber of Commerce.

The Zimmer Paper Products is said to be the only plant of its kind in Indiana. Karl B. Zimmer, owner and manager of the plant, formerly was connected with the Ostego Waxed Paper Company at Ostego, Mich. He served as general manager of that company for four years.

Due to the particular type of product, the firm will employ only skilled workmen in the plant. It has leased 10,000 square feet of space for beginning. It began operations under the most auspicious circumstances, starting 24-hour production immediately to fill orders.

Boston Paper Market Fairly Steady

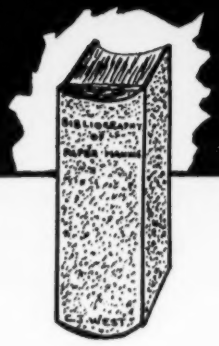
[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 24, 1930.—The paper market is fair in both fine and coarse lines. In some quarters, at least, the demand seems to tend towards the more delicate tinted papers in the fine grades. One of the large houses has had a big demand for paper for announcements, booklets and brochures. The tone in specialties is a little better.

The box board market is firm and there is said to be a tendency among manufacturers towards stiffening prices. Filled news board is quotable at $37.50 to $40 and chip board at $35 to $37.50. There is a demand for material for boxes for ladies' shoes which is reflected in a call for board.

In paper stock the price trend is downward, apparently brought about by the dull market. In old papers, solid ledger stock and No. 1 mixed paper show declines; in bagging, transmission rope, mixed strings, scrap sisal, new burlap cutting and Australian wool pouches have softened, and in foreign rags, dark cottons and lace curtains have been marked down.

Bibliography of Paper Making



Compiled by Clarence J. West

Chairman, Committee on Abstracts and Bibliography, Technical Association of the Pulp and Paper Industry
Director, Research Information Service, National Research Council
Associate Editor, International Critical Tables

The most recent compilation of Pulp and Paper Making published covering a period of twenty-eight years—1900-1928. In this work has been incorporated interesting discoveries, ways of paper making, uses of chemicals, mechanical parts together with the important abstracts of TAPPI. After exhaustive studies through many lists, abstracts and papers, the author, Mr. West, has collated all this very important information and data in this

BIBLIOGRAPHY OF PULP AND PAPER MAKING

a book of almost one thousand pages bound in an attractive linen board cover.

Contains complete index and table of contents and cross index for reference purposes.

A Partial List of the Contents

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Vol. XC New York, March 27, 1930 No. 13

THE NEWS PRINT SITUATION

While the general spirit among newsprint manufacturers is better now than for a long time back, it cannot be said that current events are conducive to an optimistic outlook.

It is rather unfortunate that the new mill of the International Paper Company at Dalhousie, N. B., upon which the people of New Brunswick have been counting so much should have come into operation at a time when the consumption of news print is at a low ebb, for the addition of a capacity of 250 tons per day to news print installations in Canada is a serious matter with exports declining not only in volume but in ratio to capacity. However, that could hardly be helped, for the arrangements for the development of the Grand Falls and the establishment of the mill as one of the most important users of the power were entered into when business was in the full flood of an unexampled prosperity, and when consequently the outlook in the news print industry was quite rosy.

Production in Canadian mills, is now down to slightly less than 70 per cent of capacity, while the output for the first two months of this year was 5,700 tons less than in the first two months of last year despite the fact that capacity has increased by some 1200 tons per day.

By the end of the year it is probable that the new mill of the Maclaren interests at Buckingham, Que., will have come into operation, adding another 250 tons to capacity, so that unless there is a marked change in the general business situation, the news print industry would appear to be in for a long pull before conditions become satisfactory.

Meanwhile the negotiations for the various mergers reported from time to time in the PAPER TRADE JOURNAL are proceeding, and it would not be at all surprising if large consolidations were announced in the near future.

Canada exported 1,294,995 cords of pulpwood to the United States last year, valued at $13,314,738, according to a statement filed at Ottawa in answer to a query in the House. Of that quantity 512,872 cords, valued at $5,208,317, went from the Province of Quebec, and 459,860 cords, valued at $4,542,842, from Ontario.

PULP AND PAPER IN NORWAY

So far as the volume of output was concerned, 1929 was a record year in the Norwegian pulp and paper industry, the increased production with some few exceptions finding its way into export markets. The industry was free from labor troubles, according to Commercial Attache W. H. Lund at Oslo, so that there was no break in operation throughout the year, while Norwegian producers benefited to some extent by the strike in Sweden, which kept that country's mills inactive for some months. Prices on the whole were firm and the demand generally satisfactory.

Developments during the last six months, however, have been such that the present outlook for the industry is not quite as favorable as a year ago. Since the domestic market absorbs only a small proportion of the total production, both pulp and paper manufacturers are dependent upon exports for the prosperity of their respective industries, and are very much affected by any changes in the world market situation. The china-clay market is practically lifeless, and has been for some months, and it has been found necessary to shut down some of the machines running on this class of paper. The expected rise of $5 per ton in news print prices has not materialized, and new production coming on during 1930 cannot be expected to help the situation. Prices for bleached sulphite also did not come up to expectation and even showed a weakening tendency during the latter part of the year, which is ascribed partly to the increased production coming on the market and partly to a decrease in demand from rayon manufacturers.

In the mechanical ground wood branch of the industry, prices throughout the year are said to have been below costs of production. To remedy this condition, the output in the two Scandinavian countries and Finland during 1930 is to be curtailed 30 per cent, or to such an extent that supply and demand will balance. Considerable amounts were disposed of to United States buyers during the last few months of the year, due to a scarcity of water which interfered with grinding at a number of the American mills, and inquiries from that source continue to come in but the United States, of course, cannot be considered as a permanent outlet for Norwegian ground wood.

INDUSTRIAL SALESMEN

Industrial concerns are too prone to judge their salesmen by how well they know the product which they sell, rather than from the state of mind of the buyer, the conditions under which the product is sold and the limitations of the salesman's ability to sell, Mr. W. A. McDermid, consultant in sales management, said at the Industrial Marketing Conference of the American Management Association at Chicago.

Many of the questions asked by the buyer about a product relate to the customer's use of the device and not to its mechanical merits. Companies which devote too much time in a sales training program to technical education make a real mistake. By presenting too many technical details concerning the product which they sell, field men lose many an order.

Mr. McDermid believes that the character of the average sales training program can be substantially improved by emphasizing the human aspect of selling. "The whole proceeding should deal basically with the salesman as a *man* and the buyer as a man. Sales educational programs generally have

neglected the old fashioned fundamentals of salesmanship as they exist regardless of product."

"We need to take our sales job apart and find what its component elements really are," Mr. McDermid said in conclusion.

"If a concern were to make a real analysis of the actual conditions under which its products are bought or not bought and for what reasons, (and this cannot be done by mail questionnaires, but in the offices of the prospects—hundreds of them), the answers to most of the serious questions involved in making sales profitably, will begin to appear automatically.

Noble & Wood Machine Co. Offers Experimental Plant Facilities to Members of TAPPI

HOOSICK FALLS, N. Y., March 24, 1930.

DEAR MR. MACDONALD:—

I have received yours of the 17th instant and assure you we are very glad to be honored among the members of your organization and hope that we may be able to contribute something toward the continued success of this organization.

In connection with this, I thought it well to advise you of one of our facilities which we are glad to place at the disposal of your organization or its members. We recently acquired, to be used exclusively for our experimental and development work, a large plant containing thousands of feet of floor space. This plant is equipped with steam boilers, provided with electricity, and an ample water supply. A portion of the space is now occupied by miscellaneous experimental machines in both laboratory and commercial sizes including jordans, beaters, pulping engines, wet machines, driers, colloid and dispermill. If at any time these facilities would be of use to any of your members, we would be very glad indeed to cooperate.

This experimental plant is not conducted for the purpose of direct profit, but for research and development work only and so far, with one or two exceptions, we have made no charge whatever for its use. These exceptions referred to were in cases where the entire plant was turned over for the matter of several weeks and in those cases the actual direct expenses only were charged.

If you should have occasion to make use of any of these facilities at any time or if any of the results from our experiments would be of use to you, we want you to feel that we are always welcome of any opportunity to cooperate.

Very truly yours,
THE NOBLE & WOOD MACHINE CO.,
H. N. Weir, Secretary and Treasurer.

Union Bag and Paper To Cut Capital

The Union Bag and Paper Corporation has called two special meetings of Stocksolders for April 15 and April 16.

The first is to consider changing the par value of the 200,000 shares of capital stock to $30 from $100 a share, thereby decreasing the authorized capital stock of the corporation to $6,000,000 from $20,000,000, and the amount of issued capital stock and the capital of the corporation to $4,494,281 from $14,980,936, and to change the directorate to one class from two classes to be elected annually.

At the meeting April 16 stockholders will be asked to approve change of capital stock from 200,000 shares of $30 par into 200,000 no par shares.

New L. L. Brown Agent at Spokane

The Zellerbach Paper Company, of Spokane, Wash., has been appointed agent for Brown's Linen Ledger, Greylock Linen Ledger and Advance Bond, three of the certified record and correspondence papers made by the L. L. Brown Paper Company, of Adams, Mass.

To Scrutinize Northwest Pulp Affairs

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., March 21, 1930.—Northwestern Pulp and Paper Company, defunct corporation which was to build a mill at Astoria, Ore., will have its affairs scrutinized by a special grand jury on order of Governor Norblad of Oregon, which was issued March 15. The order was sent by the governor to Judge Zimmerman, of the Clatsop County Circuit Court, who, it is said, has agreed to call the special session.

In another letter sent to Attorney-General Van Winkle the governor urged the appointment of a special prosecutor to conduct the grand jury investigation, and L. A. Liljeqvist was appointed.

A grand jury investigation may have to be called specially in Multnomah County also because of operation of the company there, but this will be determined later, the governor states.

Records at Salem show that the Northwestern Pulp and Paper Company was organized early in the year 1927 and that in February of that year the corporation commissioner authorized the sale of stock in the amount of $1,000,000. The permit was issued, it was said, on the representation of officials of the company that the major financing of the project had been completed and that only 20 per cent of the stock subscribed would be used for promotion purposes. The remaining 80 per cent of the funds from the sale of the stock was to be placed in a separate account and was to be used for operating expenses. If not used for this purpose it was to be returned to the subscribers.

In January, 1928, the corporation commissioner canceled a permit to sell stock in the company on the ground that the sales were made through misrepresentation. The corporation commissioner alleged that the major financing had not been completed and that officials of the concern had not acted in good faith.

Following the commissioner's action the stockholders held a meeting and demanded that the books and accounts be audited. Chris Schubel, of Oregon City, was named as chairman of the stockholders committee. Governor Norblad said that the audit disclosed that approximately $300,000 of preferred stock had been sold but that only $11,000 had been spent in acquiring property for the new mill improvements. Less than $40 remained in the treasury of the company at the time the audit was completed.

Complaints filed with Governor Norblad indicated that large amounts of money had been expended in promotion work, one salesman having received more than $35,000 and others connected with the project having also received large amounts. It is alleged in this report that other funds realized from the stock sale were invested in another pulp project near Aberdeen, Wash.

Other alleged irregularities charged against the company included the circulation of literature to the effect that a large number of eastern financiers were willing to furnish money for building the plant. One of these men, C. R. Flint, of New York, has since announced that he was not financially interested in the company, according to the governor's statement.

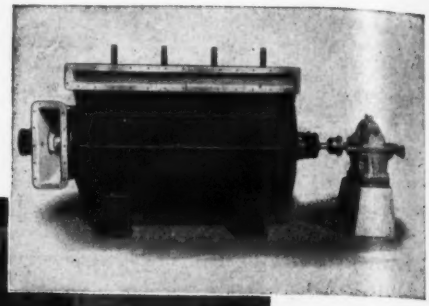
The records further show that in addition to having its personnel of officers there were two sets of directors, the western group including A. V. Allen, Astoria; B. T. McBain, W. N. McVail, Amedee Smith, Robert T. Jacobs and C. W. Miller, of Portland, and Frank Patton and G. C. Fulton. Eastern directors revealed names of seven other men besides Mr. Flint.

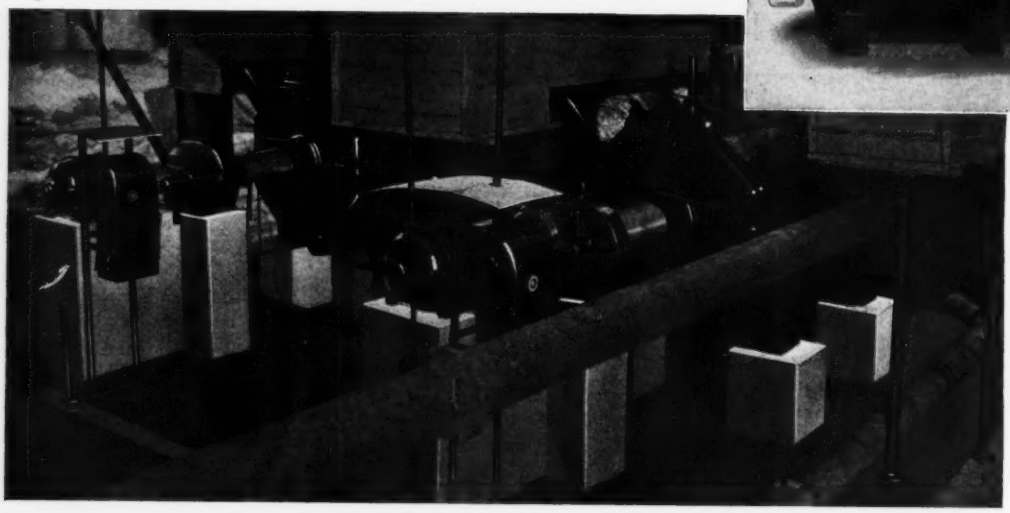
Finnish Paper Market Quiet

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 26, 1930.—The Finnish paper market on the whole is dull at the present time. Practically all important news print purchasers have contracted for their 1930 requirements and but few inquiries are coming in for this grade. The thin print market continues very quiet with no signs of improvement and prices are showing a downward trend. Wrapping paper, including kraft and M. G. cap are doing badly and the price tendency here is also weak.

CLEAN PULP





The rotary screening principle has long been approved by pulp mill men. But all previous rotary screens had certain disadvantages which did not give clean pulp. The Valley-Thune Rotary Screen has overcome these disadvantages and has proved its ability to screen pulp comparable with the flat screen.

If you were to make actual investigation of the above installations, you would find that, above all, they are consistently producing ***clean pulp.*** You will find their maintenance cost amazingly low (cylinder is only moving part) . . . their capacities at least twice as high as flat screens . . . and their operation practically noiseless . . . to say nothing of the small floor space and absence of overflow and leakage.

"Quality is remembered long after Price is forgotten."

Can you afford to ignore these advantages?

Not if you are progressive and concerned about the earnings of your mill.

Your inquiry addressed to the Valley Iron Works Co., Appleton, Wis., will bring you information that will throw new light on screening sulphite and sulphate pulp.

VALLEY

Equipment for Paper and Pulp Mills

New York Office: 350 Madison Ave.
Western Mfg. & Sales Div.: Smith & Valley Iron Works Co., Portland, Ore.
Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts and Bibliography of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

For additional information regarding these abstracts subscribers should address the chairman of the Abstracts Committee, Dr. Clarence J. West, National Research Council, 21st and B Streets, Washington, D. C.

Pulp Screen. R. E. Wagner. U. S. pat. 1,669,029, May 8, 1928. In an outward-flow screen, a solid rotating drum with wings or blades on its outer surface is provided inside the screen drum to force the stock against the screen surface. As the blades have a tendency to throw the stock against the screen with too great a force and rapidly clog the perforations of the screen, particularly at those points where the pulp is introduced, the constructions has been modified by providing the screen with two or more belts or zones in which the screen is whole (unperforated) and the inlets for the pulp or the diluting water are located in these zones. In this way the pulp cannot be thrown directly through the screen by the blades on the drum, but are forced to assume a direction of flow parallel to the screen surface and into the perforated sections intermediate the unperforated zones. This causes pulsations in the liquid perpendicular to the screen surface and gives a soft and smooth screening action. A receiving chamber is preferably provided at one end of the drum, from which chamber openings or passages lead in the drum and open at the circumference of the drum at points inside the unperforated zones of the screen. A. P.-C.

Cutting Mechanism for Wet Machines. C. W. Sponsel assignor to Case & Marshall, Inc. U. S. pat. 1,665,644, Apr. 10, 1928. The cutting means is in the form of a knife carried by a support for sliding longitudinally of the couching roll during the cutting operation and the support during the cutting operation is moved in unison with the roll so that the knife will make a cut which is parallel to the axis of the roll, thus producing square sheets. This is obtained by providing means for engaging the knife support with the couch roll when the pulp has been built up to the desired thickness, the engaging means being controlled either automatically or manually. During the cutting operation the knife support moves with the roll through an arc of about 90°, during which time the knife is moved across the face of the roll. In order to have the movement of the knife properly timed relative to that of the roll, the knife driving mechanism is driven from the couch roll.—A. P.-C.

Pulp Screen. S. Milne. U. S. pat. 1,670,473, May 22, 1928. A circular straining drum is suitably mounted in a vat and preferably adapted to be rotated at a slow speed. Through the center of the drum passes a shaft on which is fixed a suitable number of rings made with arms or spokes to allow the pulp to pass longitudinally through the drum. On the outer circumference of these rings impellers are fixed consisting of shallow blades arranged parallel to the shaft. These impellers are constructed so that by their rotation they produce a wave of increased pressure on their leading edges and a wave of decreased pressure on their trailing edges, the leading and trailing edges being shaped respectively to give a differential impulse in one direction than in the other, with a resultant motion of the liquid stock in that one direction through the drum. The outer faces of the impellers are arranged so that they form a diameter smaller than the interior of the drum, that is to say, they sweep over the inner surface of the drum without actual contact, the exact distance between impeller blades are arranged with comparatively wide spaces between them to allow the pulp to get easily to the drum surface. A number of different forms of impeller blades suitable for the purpose are described. A. P.-C.

Process of Shredding and Drying Pulp. O. Anderson, assignor to Fidalgo Pulp Manufacturing Company. U. S. pat. 1,668,446, May 1, 1928. Pulp is discharged directly from a wet machine to shredding knives which are rotated at a relatively slow speed. The shredding knives gently pull small pieces of pulp from the body of the sheet, dividing it into relatively small pieces which range up to approximately 1 inch in diameter. The shredded pulp is delivered on to an endless belt which passes through a tunnel drier divided longitudinally into two comportments. The belt passes through one compartment, while the other is provided with heating coils. The two compartments communicate through a number of openings in which are placed fans which force the air from the heating chamber to the drying chamber. A temperature of about 120° F. is maintained in the drier and the speed of the conveyor is about 7 ft. per min. During its travel through the drier the pulp is turned by means of agitator blades placed over and nearly in contact with the conveying belt. The dried pulp discharged from the end of the drier is compressed into bales.—A. P.-C.

Unloading Device for Slitter and Rewinding Machines. P. D. Parsons assignor to Scott Paper Company. U. S. pat. 1,675,863, July 3, 1928. The chief feature of the invention consists in providing a fixed mandrel on which the small rewound rolls are made and from which they are discharged without removing the mandrel from the machine. This is effected by constructing the winding mandrel so that it is pivoted at one end, while the other end engages the driving means. When starting to wind, the strips of slit paper are laid across a longitudinal slot in the mandrel, a locking bar is placed in position, and winding is started. When the rolls are of the required size the mandrel is

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drawn out a short distance, swung out, the locking bar is removed, the rolls are discharged, the mandrel is swung into operating position and the above cycle of operations are repeated. —A. P.-C.

Method and Machine for Producing Tightly-Coiled Paper. F. Schade. U. S. pat. 1, 677,599, July 17, 1928. The object of the invention is to produce tightly-wound rolls of fragile paper, or of paper of unequal thickness along its two edges, or which consist of a number of layers of folded paper, or of paper with one or more linings, all of which have hitherto been made in the form of loose rolls, that is, having the individual windings loosely contacting with one another. The method used consists in tightening the windings from the inside and not, as is usual, from the outside, there being at the same time exerted an axial pressure on the end surfaces of the roll formation. This pressure is exerted by means of plates, disks or rods placed at right angles to the axis of the roll. The tightening up of the individual windings of the roll is then performed by means of the friction produced between the edges of the individual windings and the members exerting the axial pressure. Each winding is thus prevented from moving until the pull exerted thereon from the windings already tightly coiled up has reached such a magnitude that it is able to overcome the said friction. The members exerting the axis pressure do not partake of the rotary movement on the roll.—A. P.-C.

Apparatus for Making Pulpboard. H. T. Price. U. S. pat. 1,661,678, Mar. 6, 1928. Mounted inside a tank or casing are two traveling endless woven wire belts arranged in the shape of a Y, that is, the two belts converge to a central point and then run together for some distance. Mounted at the meeting point of the belts is a perforated pipe for supplying steam to the material passing that point. Two woven wire screens, which are given a reciprocating motion, converge to near the meeting place of the two endless belts and make an angle with each other about half the angle made by the endless belts. Suitable fibrous or other material is fed between each traveling belt and the adjacent reciprocating screen; and after meeting and becoming united the two layers of material are conveyed to suitable finishing apparatus.—A. P.-C.

Means for Reclaiming Suspended Solids from White Water. A. Backus and G. S. Backus. U. S. pat. 1,670,874, May 22, 1928. The white water is mixed with a certain proportion of the stock being put through the machine from which the white water is derived and the mixture of white water and fresh stock is sent to a suction drum type of save-all. The long fibers added in the form of fresh stock allows of building up a satisfactory filtering mat on the save-all screen, which effectively holds back the fibers and other solids in the white water.—A. P.-C.

Drier for Board, etc. A. J. Vance, U. S. pat. 1,674,349, June 19, 1928. The material is conveyed through the drier casing by means of a series of pairs of felt covered rolls. The pipes by means of which the air in the drier is heated are placed directly under the rolls and in the same direction, so that the felt coverings are dried out as rapidly as they absorb moisture from the wet board.—A. P.-C.

Paper Waxing Apparatus. R. A. Hayward assignor to Kalamazoo Vegetable Parchment Company. U. S. pat. 1,658,485, Feb. 7, 1928. After impregnating with paraffin and cooling by passing through a cold water bath as usual, the sheet is passed in close proximity to a number of elongated box-like blowers, which are arranged in a vertical series on alternately opposite sides of the waxed sheet. Within each blower head is a perforated exhaust pipe. The exhaust pipes are connected, through headers and a separating chamber to the intake of the blower which supplies air to the blower heads. The tension of the sheet prevents it from being blown away from the blower heads, while the blast of air prevents the sheet from coming into sealing contact with the exhaust pipe openings which are placed quite close to the sheet. This enables the passing of air at high velocity across the surface of the paper, effectively wiping up and carrying away the water, prevents undue friction of the paper on the parts of the apparatus, and allows the web of waxed paper to be run at high speed and at the same time effectively removes the water.—A. P.-C.

Some Anti-friction Bearing Dividends. Reginald Trautschold. Paper Trade J. 87, No. 17, 110-118 (Oct.25, 1928). Examples are given of the savings in power effected in pulp and paper mills by the judicious installation of anti-friction bearings.—A. P.-C.

Corrosion of Piping in Paper Mills. G. R. Wyman, Bird & Son, E. Walpole, Mass. Paper Trade J. 87, no. 18, 47 (Nov. 1, 1928). A brief discussion of the chief sources of interior corrosion of piping in pulp and paper mills, and of the methods of combating it.—A. P.-C.

Application of Meters and Instruments in Pulp and Paper Mills. R. V. Knapp, Bailey Meter Company. Paper Ind. 10, 1190-1194 (Oct. 1928). A general discussion indicating the points of application where installation of dependable and accurate meters and instruments in pulp and paper mills would prove a profitable investment, most of the applications discussed being already in use in one or more mills.—A. P.-C.

Automatic Control Through Temperature or Pressure. C. J. Swan, American Radiator Company. Ind. Eng. Chem. 20, 1152-1155 (Nov. 1928). A description of the construction, operation and applications of the "mercoid control."—A. P.-C.

High Steam Pressure in Covington, Va., Mill. Anon. Paper Trade J. 87, no. 17, 138-140 (Oct. 25, 1928.) A description of the new power plant at the Covington mill of the West Virginia Pulp and Paper Company.—A. P.-C.

Hydrogen-Ion Control in Water Softening. John R. Baylis, Dept. of Public Works, Bureau of Engineering, Chicago, Ill. Ind. Eng. Chem. 20, 1191-1194 (Nov., 1928). A knowledge of the pH of the water through the different stages of the softening process enables the most efficient results to be obtained in a plant where lime is used for softening. The approximate saturation equilibrium is much higher than calcium carbonate for a given pH. Most natural waters contain some magnesium carbonate and this throws the saturation equilibrium somewhat higher than the curve for calcium carbonate. Magnesium begins to precipitate as the hydroxide when the pH is increased above 10.3. Where the magnesium occurs largely as the carbonate, it can be reduced to about 3 parts per milliom of magnesium by increasing the pH to about 10.8 with calcium hydroxide. The maximum softening possible for waters containing both calcium and magnesium carbonates is to add lime until the pH is about 10.8 and then precipitate the calcium by converting it to the carbonate. It is better to recarbonate at two or three stages of the process than to attempt to recarbonate at only one point. —A. P.-C.

Large Unit Added to Port Huron Paper Mill. Anon. Paper Trade J. 87, no. 17, 65-69 (Oct. 25, 1928. A description of the new paper making unit recently installed in the Black River mill of the Port Huron Sulphite and Paper Company.—A. P.-C.

New Power Development at Wausau Paper Mills. Anon. Paper Trade J. 87, no. 17, 73-75 (Oct. 25, 1928). A brief description of the new power plant of the Wausau Paper Mills Company, Brokaw, Wis.—A. P.-C.

Modern Hollen Plant Installed at Otis Mill. Anon. Paper Trade J. 87, no. 17, 78-79 (Oct. 25. 1928). A brief description of the new boiler plant installed at the Otis still of International Paper Co., Chisholm, Me.—A. P.-C.

Papermaking in the Pacific Northwest. W. G. MacNaughton, News Print Service Bureau. Paper Trade J. 87, no. 17, 53-55 (Oct. 25, 1928). A comparison of the status of the industry in 1921 and at the present time.—A. P.-C.

U. S. Patents on Papermaking. Clarence J. West, National Research Council, Washington, D. C. Paper Trade J. 87, no. 16, 38-39, (Oct. 18, 1928). A compilation of patents issued during July, August and September, 1928.—A. P.-C.

A Study of Water Removal on Board Machines*

By George R. Wyman[1] and R. A. Wilkins[2]

A series of tests have been made on two cylinder paper machines used for the manufacture of container board to determine the water removal efficiency of various parts of the machine.

It was hoped that, with such data available, points of attack to increase the efficiency of the machines would be brought out. Realizing the great saving that can be made in putting the board onto the first drier at the lowest possible moisture content, we have concentrated upon a study of the wet end of the machine.

Method of Procedure

a. The following data were *obtained by direct observations* on the machines, the numbers referring to the columns of the tables found at the end of this paper:

(1) Temperature of Stock, Deg. F.

In lining stuff box	(10)
In filler stuff box	(11)
In lining vats	(12)
In filler vats	(13)

(2) Pressure At Presses—The number of 50 pound weights on each side of the three presses was observed, together with the horizontal distance between the center of gravity of these weights and the swinging point of the arm. The pressure in pounds, due to these weights only, on the bearing of the top roll was calculated as follows:

Q = Pounds on bearing (nPx)
P = Number of 50 pounds weights
x = Distance in inches
n = 83.3 at 1st press, Mill No. 1 and all presses in Mill No. 2
28.6 at 2nd and 3rd presses

Q is given in Tables 14, 15, 17, 18, 20 and 21.

Added to this pressure the weight of the top roll, the *pressure per inch*, (16, 19 and 22), was calculated on the machine width.

(3) Water Removal On Wet End—The amount of water leaving machine was measured and calculated as pounds per minute at the following places:

Squeeze rolls	(23)
Primary presses	(24)
1st press	(25)
2nd press	(26)
3rd press	(27)

(4) Water Content In Board—

Before drier	(42)
After drier	(43)
At reel	(6)

Two samples were taken at each point, one at the front and one at the back side of the machine, not sampling at the very edge of the board. Since 7/8/29 these samples were put into cans with air-tight fitting covers as soon as taken at the machine, and all weighings were made with the sample in the can on an accurate balance. On tests run before this, samples were weighed in the open at the machine on grain scales immediately after being taken.

b. The remainder of the data given in the charts was obtained as follows:

(1) Machine Operation Data—(1) The grade of board (2) speed of the machine (3), production (4), and down time (8), were taken from the paper machine reports. To get the *actual production* (5), the trim was added to the weighed production (4). The actual production was reduced to bone dry basis (7) by subtracting the moisture at reel (6). Considering the down time (8), this last production figure was calculated in pounds per minute (9).

(2) Water Removal On Wet End—The total water removal is given in pounds per minute (28) and in pounds of water per pound of bone dry board (29). The last figure is obtained by dividing (28) by (9).

(3) Water Content In Board On Wet End—Starting at the drier, the water content is given as per cent of bone dry board (40), and as pounds of water per pound of bone dry board (41), calculated from (42). By adding the water removed in the 3rd press (27), calculated as pounds of water per pound of bone dry board and dividing by (9), the water content in board before the 3rd press was obtained as pounds of water per pound of bone dry board (39). From this figure the percentage of bone dry board was calculated (38).

In a similar manner, the calculation was continued backwards by which means the conditions before the 2nd press (37 and 36), 1st press (35 and 34), primary press rolls (33 and 32) and at last squeeze rolls (31 and 30), were obtained.

The figures obtained in this way are not exactly true. It is supposed that the water, which is removed on the different presses, is coming only from the sheet of board passing through the press. At the same time, however, there is passing one or two felts through the press anld every change in the water content of these felts should be considered in the calculations above. As this is not possible, however, it has been necessary to suppose that the content of water in the felts does not change from the squeeze rolls to the 3rd press, and this is probably not quite true. In comparing conditions at different tests it is, however, of great value to consider these figures.

(4) Drier conditions—

Moisture before drier—M_1 per cent	(42)
Moisture after drier—M_2 per cent	(43)

Evaporation in pounds of water per pound of bone dry board (44):

$$\left[\frac{M_1}{100 - M_1} - \frac{M_2}{100 - M_2}\right]$$

As M_2 is very small in comparison to 100, it is possible to say:

Evaporation: $\left[\frac{M_1}{100 - M_1} - \frac{M_2}{100}\right]$ pounds per pound of bone dry board.

By multiplying by the actual production (7), the evaporation in pounds of water per 24 hours (45) was obtained.

The steam consumption was measured by Republic flowmeters. The figure given (46) includes the steam that is used to heat the vapor absorption system air for the driers. No consideration was taken of the difference in heating value of the steam.

All figures on steam consumption depend upon the accuracy of the steam measuring instrument, which could not be checked in any way.

The *relative steam consumption* is given in

Pounds of steam per pound of bone dry board	(47)
Pounds of steam per pound of evaporated water	(48)

Comparison of Data

We have made five series of tests. These were as follows:

Test 1—Mill 1, 113 inches trimmed width, before rebuilding the wet end section, December, 1928.

Test 2—Mill 1, after rebuilding the wet end section, June-July, 1929.

Test 3—Mill 2, 80 inches trimmed width, February, 1929.

Test 4—Mill 2, July and Stptember, 1929.

Test 5—Mill 2, special test with heating of the shower water on the cylinders, October, 1929.

The following is a summary of the data obtained from these tests. All figures from the tests given below are calculated on a bone dry basis.

a. Machine Production:

TABLE 1

	Test 1 F. C. Lined	Test 2	Test 3	Test 4
Grades run	.022 inch	Different	Corr. Lined	Different
Speed, feet per minute	179.3	180.9	129.0	125.7
Production, pounds per minute per inch of machine width	1.216	1.352	0.772	0.822

The difference in production between Tests 1 and 2 is due to the rebuilding of the wet end on the machine in Mill No. 1.

b. Conditions Between Wet End and Driers:

TABLE 1A

	Test 1	Test 2	Test 3	Test 4
Per cent moisture in board before driers	64.50	63.44	65.38	64.63

N. Y., Feb. —, 1930.

* Presented at annual meeting of TAPPI, Pennsylvania Hotel, New York,

[1] Member TAPPI, vice president, Bird & Son, Inc., East Walpole, Mass.

[2] Bird & Son, Inc., East Walpole, Mass.

TEST 1 — DEWATERING TEST—MILL NO. 1 MACHINE

Date	Grade	Machine Operation Data: Speed, Ft./min.	Weighed Production, Lbs./24 hrs.	Actual Production, 3 per cent trim added	Moisture at Reel, %	Actual Production, pounds bone dry	Down Time, hours	Production, lbs./min., bone dry	Temperatures deg. F. of Stock: Stuff Boxes Lining	Stuff Boxes Body	Vats Lining	Vats Body	of Press Water: Squeeze Rolls	Primary Presses	1st Press	2nd Press	3d Press	Pressure at Presses: 1st Press Pounds, Front	1st Press Pounds, Back	1st Press Pounds/in.	2d Press Pounds, Front	2d Press Pounds, Back	2d Press Pounds/in.	3d Press Pounds, Front	3d Press Pounds, Back	3d Press Pounds/in.
1	2	3	4	5	6	7	8	9	10	11	12	13	13a	13b	13c	13d	13e	14	15	16	17	18	19	20	21	22
12—4—28	F. C. Lined .022	178	201,080	209,100	7.0	194,500	0	135.0	108	107	80	80	...	...	...	...	...	8350	8120	220.0	1250	1080	102.8	1250	860	101.0
12—5—28	F. C. Lined .022	179	202,020	210,100	7.2	194,900	0	135.2	101	104	74	71	...	...	...	...	...	8350	8120	220.0	1250	1080	102.8	1250	860	101.0
12—6—28	F. C. Lined .022	179	205,520	213,700	7.6	197,500	0	137.0	100	110	77	76	...	...	...	...	...	8350	8120	220.0	1250	1080	102.8	1250	860	101.0
12—7—28	F. C. Lined .022	181	210,160	218,600	6.9	203,500	0	141.4	106	108	79	84	...	...	...	...	...	8350	8120	220.0	1250	1080	102.8	1250	860	101.0
Average		179		212,880	7.18	197,800	0	137.5	103.8	107.3	77.5	77.8	...	...	...	...	...	8350	8120	220.0	1250	1080	102.8	1250	860	101.0

TEST 1—Continued — DEWATERING TEST—MILL NO. 1 MACHINE

Date	Grade	Water Removal Lbs./Min. Squeeze Rolls: First	Second	Third	Primary Press.	1st Press	2nd Press	3rd Press	Total	Lbs. per lb. bone dry stock	Water Content of Board at Wet End: Before Primary Presses	Lbs./lb.	Before Primary Presses,%	Lbs./lb.	Before 1st Press, %	Lbs./lb.	Before 2nd Press, %	Lbs./lb.	Before 3d Press, %	Lbs./lb.	Before Dryer, %	Lbs./lb.	Dryer Conditions: Per Cent Water Evaporation Before Dryer	After Dryer	Steam Consumption Lbs. per lb. bone dry stock	Pounds/24 hours	Pounds/24 hours	Lbs. per lb. bone dry stock	Lbs. Steam per lb. evap'd
1	2	23a	23b	23c	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
12—4—28	F. C. Lined .022	67.8	26.8	48.5	570	65.2	5.43	6.26	790	5.85	11.6	7.61	13.3	6.55	30.0	2.33	35.1	1.85	35.6	1.81	36.2	1.76	63.8	1.0	1.752	341,000	519,000	2.67	1.52
12—5—28	F. C. Lined .022	78.6	26.5	42.9	608	66.0	6.18	6.18	834.4	6.17	11.1	7.98	12.7	6.88	29.6	2.38	34.7	1.89	35.2	1.84	35.8	1.79	64.2	0.7	1.786	348,000	565,800	2.90	1.63
12—6—28	F. C. Lined .022	81.0	24.9	41.8	588	74.6	6.60	6.43	823	6.01	11.3	7.86	12.8	6.78	28.8	2.48	34.0	1.94	34.6	1.89	35.2	1.84	64.8	1.0	1.830	362,000	583,800	2.95	1.61
12—7—28	F. C. Lined .022	88.5	26.5	42.8	597	68.8	7.18	6.18	837	5.85	11.4	7.79	13.0	6.68	29.0	2.46	33.7	1.97	34.3	1.92	34.7	1.88	65.3	1.1	1.869	380,000	582,600	2.86	1.53
Average		79.0	26.2	44.0	590.8	68.4	6.35	6.26	821.1	5.98	11.4	7.80	12.9	6.72	29.3	2.42	34.3	1.92	34.9	1.87	35.5	1.82	64.52	0.95	1.809	358,000	562,800	2.84	1.57

TEST 3 — DEWATERING TEST—MILL NO. 2 MACHINE

Date	Grade	Machine Operation Data: Speed, Ft./min.	Weighed Production, Lbs./24 hrs.	Actual Production, 3 per cent trim added	Moisture at Reel, %	Actual Production, pounds bone dry	Down Time, hours	Production, lbs./min. bone dry	Temperatures deg. F. of Stock: Stuff Boxes Lining	Stuff Boxes Body	Vats Lining	Vats Body	of Press Water: Squeeze Rolls	Primary Presses	1st Press	2nd Press	3d Press	Pressure at Presses: 1st Press Pounds, Front	1st Press Pounds, Back	1st Press Pounds/in.	2d Press Pounds, Front	2d Press Pounds, Back	2d Press Pounds/in.	3d Press Pounds, Front	3d Press Pounds, Back	3d Press Pounds/in.
1	2	3	4	5	6	7	8	9	10	11	12	13	13a	13b	13c	13d	13e	14	15	16	17	18	19	20	21	22
2—4—29	Cor. Lined .016	140	58,420	59,200	6.0	55,700	11 hrs.	71.5	116	110	72	83	...	...	...	...	...	7530	6850	209.0	3660	4230	139.9	3660	2780	124.3
	Cor. Lined .016	145																								
2—5—29	Cor. Lined .030	100	81,600	84,000	8.1	77,300	....	53.7	119	107	70	83	...	...	...	...	...	7650	6850	212.0	3660	4230	139.9	3440	2780	122.0
2—6—29	Cor. Lined .030	100	104,120	107,200	6.6	100,100	....	70.2	130	124	73	93	...	...	...	...	...	1500	3220	105.6	3660	4230	139.9	3660	2780	124.3
	Cor. Lined .030	100																2760	1780	104.0	3660	2000	115.6	3660	2780	124.3
2—7—29	Cor. Lined .016	145	95,540	98,400	8.6	90,000	....	62.5	122	117	71	95	...	...	...	...	...	7810	6850	213.8	3660	4230	140.0	3660	2780	124.3
2—8—29	Cor. Lined .016	145	94,060	96,900	5.3	91,800	....	63.5	124	118	73	100	...	...	...	...	...									
	Cor. Lined .016	145																7810	6850	213.8	3660	4230	140.0	3660	2780	124.3
2—9—29	F. F. Wraps .021	145	90,760	93,500	7.4	86,600	....	60.2	114	118	64	93	...	...	...	...	...	....	....	176.4	....	....	136.0	....	....	123.4
Average		129		89,880	7.0	83,600	1.83	62.9	120.9	115.7	70.5	91.2	...	...	...	...	...									

TEST 3—Continued — DEWATERING TEST—MILL NO. 2 MACHINE

TEST 3—Continued

DEWATERING TEST—MILL NO. 2 MACHINE

Date	Grade	Water Removal Lbs./Min. — Squeeze Rolls: First	Second	Third	Primary Presses	1st Press	2nd Press	3rd Press	Total	Lbs. per lb. bone dry stock	Water Content of Board at Wet End — Before Squeeze Rolls, %	Lbs./lb.	Before Primary Presses	Lbs./lb.	Before 1st Press, %	Lbs./lb.	Before 2nd Press, %	Lbs./lb.	Before 3d Press, %	Lbs./lb.	Before Dryer, %	Lbs./lb.	Dryer Conditions — Per Cent Water Evaporation: Before Dryer	After Dryer	Steam Consumption: Lbs. per lb. bone dry stock	Pounds/24 hours	Pounds/24 hours	Lbs. per lb. bone dry stock	Lbs. Steam per lb. evap'd
1	2	23a	23b	23c	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
2—4—29	Cor. Lined .016.....		64.0		216	92	5.2	3.9	381	5.32	12.3	7.11	13.9	6.21	23.8	3.19	34.4	1.91	35.2	1.84	35.9	1.79	64.1	2.4	1.762	98,000	150,000	2.70	1.53
	Cor. Lined .016.....																												
2—5—29	Cor. Lined .030.....		63.1		209	86.3	6.8	4.5	370	6.89	10.9	8.17	11.6	7.60	21.2	3.71	32.2	2.11	33.6	1.98	34.5	1.90	65.5	3.8	1.862	144,000	291,000	3.76	2.02
2—6—29	Cor. Lined .030.....		29.7		201	34.1	14.2	8.7	288	4.10	14.1	6.09	15.0	5.66	25.3	2.80	3.02	2.31	32.2	2.11	33.4	2.00	66.6	3.6	1.959	196,000	339,000	3.39	1.73
	Cor. Lined .030.....		30.9		189	22.3	9.4	8.8	260	4.15																			
2—7—29	Cor. Lined .016.....		43.4		163	88.4	6.3	5.2	306	4.90	13.3	6.55	14.4	5.95	24.2	3.13	3.08	2.25	32.1	2.12	33.2	2.01	66.8	3.1	1.981	178,000	333,000	3.70	1.87
2—3—29	Cor. Lined .016.....		56.5		213	90.3	6.1	4.1	370	5.81	11.6	7.66	12.9	6.77	22.5	3.45	3.29	2.04	34.0	1.94	34.7	1.88	65.3	1.5	1.867	171,000	354,000	3.86	2.07
	Cor. Lined .016.....																												
2—9—29	F. F. Wraps .021....		57.7		210	89.3	6.6	4.6	371	6.17	11.2	7.90	12.6	6.94	22.5	3.45	3.37	1.97	35.0	1.86	36.0	1.78	64.0	1.6	1.762	153,000	426,000	4.91	2.78
Average	.....		51.4		203.0	76.1	7.8	5.5	343.8	5.66	12.0	7.36	13.3	6.54	23.2	3.31	3.23	2.10	33.6	1.98	34.6	1.89	65.38	2.67	1.865	156,000	303,300	3.63	1.94

TEST 5

DEWATERING TEST—MILL NO. 2 MCH.

Comparison of Cold and Heated Water in Filler Cylinder Showers

Date	Test No.	Grade	Machine Operation Data: Speed, Ft./min.	Weight, Lbs./500 sq. ft.	Production, 80" width, Lbs./24 hours	Production with 3% trim, Lbs./24 hours	Moisture at Reel, per cent	Production, bone dry, Lbs./24 hours	Production, bone dry, Lbs./min.	Temperatures: Stuff Boxes, Lining	Stuff Boxes, Body	Felt Showers, Top	Felt Showers, Bottom	Stock in Vats: No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	Cylinder Showers: No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
1	1a	2	3	3a	4	5	6	7	9	10	11	11a	11b	11c	11d	11e	11f	11g	12a	12b	12c	12d	12e	12f	12g	12h	12j
			....	...	.....	.....	5.63	.....	...	94	119	79	79	89	89	89	89	89	83	83	84	86	86	84	80	81	80
			....	...	.....	.....	4.91	.....	...	96	118	78	78	94	94	94	94	94	86	84.5	87.5	89.5	89.5	87.5	84.5	82.5	81
			....	...	.....	.....	5.63	.....	...	97	116	81	81	94.5	94.5	94.5	94.5	94.5	85	85	89	90	90	90	90	78	77.5
			....	...	.....	.....	5.56	.....	...	98	124	77	77	94.5	94.5	94.5	94	94	84	84	89	90	90	90	90	77	75.5
			....	...	.....	.....	5.08	.....	...	100	121	78	78	94.5	94.5	94.5	94.5	94	85	85	88	89	90	90	89	79	78
			....	...	.....	.....	..	.....	...	101	119	78	78	94	94	94	94	93.8	84	84	88	90	88	88.5	88.5	80	79.5
10-7-29	1	F. F. Wraps	....	...	102,400	105,500	5.36	99,600	69.3	97.7	119.5	78.5	78.5	93.3	93.8	93.8	93.8	93.1	84.5	84.3	87.6	89.1	88.9	88.3	87.0	79.6	78.6
			....	...	.....	.....	5.35	.....	...	121	118	78	78	...	116	116	116	116	...	95.5	...	120	118	117	116	...	78
			....	...	.....	.....	5.26	.....	...	126	112	81	81	...	115	115	115	115	...	97	...	120	120	118	117	...	80
			....	...	.....	.....	..	.....	...	128	114	78	80	...	111.5	111.5	111.5	111.5	...	97	...	115	115	110	109	...	82
10-8-28	2	Corr. Lin. .016.....	162.5	34.0	106,400	109,600	5.31	103,600	72.0	125.0	114.7	79.0	79.7	...	114.2	114.2	114.2	114.2	...	96.5	...	118.3	117.7	115.0	114.0	...	80.0
			....	...	.....	.....	4.61	.....	...	131	125	80	79	...	97	98	98	98	...	101	...	89	93	94	89	...	80
			....	...	.....	.....	...	.....	...	137	117	80	80	...	94	95	95	95	...	103	...	90	91	92	89	...	80
10-9-29	3	Corr. Lin. .016.....	161.5	34.4	106,600	109,800	4.61	104,600	72.8	134.0	122.8	80	79.5	...	95.5	96.5	96.5	96.5	...	102	...	89.5	92.0	93.0	89.0	...	80.0
			....	...	.....	.....	5.19	.....	...	104	117	75	95	95	94	94	94	94	...	86	92	92	93	93	90	...	75
10-10-29	4	Brown Lined Chip .016.....	163.0	32.0	103,000	103,100	5.19	97,600	67.9	104	117	75	95	95	94	94	94	94	...	86	92	92	93	93	90	...	75
			....	...	.....	.....	4.58	.....	...	91	105	77	94	114	114	114	114	114	...	84	117	120	121	119	121	...	76
			....	...	.....	.....	4.28	.....	...	92	112	76	96	119	119	119	119	119	...	83	122	126	122	118	119	...	76
10-10-29	5	Brown Lined Chip .016.....	163.0	33.5	104,900	108,000	4.43	103,100	71.7	91.5	108.5	76.5	94.5	116.5	116.5	116.5	116.5	116.5	...	83.5	119.5	123.0	121.5	118.5	120.0	...	76.0
			....	...	.....	.....	5.20	.....	...	96	109	63	99	83	83	83	82.5	82.5	...	80	70	65	68	67	66	...	64
			....	...	.....	.....	5.39	.....	...	95	107	75	107	83	88	88	88	88	...	81	100	87	88	100	85	...	75
			....	...	.....	.....	3.39	.....	...	94	108	73	108	93	93	93	93	93	...	82	103	92	92	97	90	...	73
			....	...	.....	.....	4.39	.....	...	94	106	70	105	92	92	92	92	92	...	81	96	90	90	96	98	...	70
10-11-29	6	Brown Lined Chip .016.....	156.0	33.7	100,800	103,800	4.72	98,800	68.7	94.7	107.5	70.3	104.7	89	89	89	88.9	88.9	...	81	92.3	83.5	84.5	90.0	84.8	...	70.5

Note—Test No. 6 was run with fresh water in all showers. All other tests with white water in body cylinder showers.

Averages:																											
Cold	3.4	.....	162.3	33.2	104,800	106,500	4.90	101,100	70.4	119.0	119.5	82.4				95.2			94.0				91.5			77.5	
Hot	2.5	.....	162.8	33.8	105,700	108,800	4.87	103,400	71.9	108.3	111.6	82.4				115.4			90.0				118.5			78.0	

The moisture content at this point is remarkably constant. The decrease in the moisture content which was expected as a result of the rebuilding of the wet end of Mill No. 1 machine was not very great: 64.50 to 63.44 per cent.[3] The data from Test 2 seem to signify that a heavy sheet makes it necessary to reduce the speed of the machine sufficiently to obtain lower moisture before the drier than in other cases.

This shows that the drier on the machine in Mill No. 1 is "the narrowest section" of that machine when running heavy grades.

c. CONDITIONS ON WET END:

(1) *Temperatures in Stock*—deg. F.

TABLE 2

	Test 1	Test 2	Test 3	Test 4
Lining stuff box	103.8	123.2	120.8	126.7
Filler stuff box	107.3	120.4	115.7	123.3
Lining vats	77.5	101.4	70.5	101.7
Filler vats	77.8	108.2	91.2	101.0

The differences in temperatures are due to different time of the year for the tests. The effect of the temperature has been studied in a special test, (5), discussed below.

(2) *Pressure at Presses*:

TABLE 2A

	Test 1	Test 2	Test 3	Test 4
Pressure, pounds per inch of the machine width:				
1st Press	220.0	225	176.4	161
2nd Press	102.8	101	136.0	84
3rd Press	101.0	98	123.9	93

The pressure is very much higher on the Mill No. 1 machine than on the Mill No. 2 machine. It was about the same pressure at test 1 as test 2, and at test 3 as at test 4 respectively. The pressure was kept pretty constant; it was, however, kept slightly higher on heavy grades than in other cases.

(3) *Water Removal on Wet End*:

TABLE 3

	Test 1	Test 2	Test 3	Test 4
Total water removed from board between vats and driers, pounds/min./inch machine width	6.84	5.48	3.74	3.84
Pounds per pound of board	5.98	4.33	5.66	5.35

The considerable decrease in the amount of water removed by rolls and presses was the result of the rebuilding of the vats of the Mill No. 1 machine. (Tests 1 and 2).

TABLE 4

	Pounds per pound of Board				Per cent of Total			
	Test 1	Test 2	Test 3	Test 4	Test 1	Test 2	Test 3	Test 4
Water removed at:								
Squeeze rolls	1.08	0.90	0.83	0.65	18	21	15	12
Primary press rolls	4.30	2.92	3.38	3.22	72	68	60	60
Presses	0.60	0.50	1.45	1.48	10	11	26	28

Table 4 shows how this water removal is divided between the squeeze rolls, primary press rolls and main presses.

(4) *Water Content in Board on Wet End*:

TABLE 5

	Water in board, pounds per pound of bone dry board				Per cent of bone dry			
	Test 1	Test 2	Test 3	Test 4	Test 1	Test 2	Test 3	Test 4
Before squeeze rolls	7.80	6.08	7.55	7.18	11.3	14.1	11.7	12.4
Before primary press rolls	6.72	5.18	6.72	6.53	13.0	16.2	12.9	13.4
Before 1st press	2.42	2.26	3.34	3.31	29.2	30.7	23.0	23.3
After 3rd press	1.82	1.76	1.89	1.83	35.5	36.5	34.6	35.4

These figures are given with the reservation for their correctness, which was discussed above. They show the conditions in the board on the wet end.

From the figures of the water content before the squeeze rolls, it is possible to judge the efficiency of the water removal in the vats.

The rebuilding of the vats of the Mill No. 1 machine between Test 1 and Test 2 increased the water removal in the vats very considerably. The moisture content of the board leaving the vats has been reduced from 7.80 to 6.08 pounds per pound of board, which means a decrease of 22 per cent.

Because of this improved efficiency of the vats, there is less water to be removed by the squeeze rolls, primary presses and presses. This is the reason for the decrease in water removal from this part of No. 5 machine as shown above.

The efficiency of the squeeze rolls can be studied by comparing the first two horizontal lines in Table 5. In the same way all the different parts of the wet end can be studied.

Conclusions: The rebuilding of the wet end of the Mill No. 1 machine has resulted in a decided improvement in the wet end efficiency which has moved some of the water removal to earlier parts of the machine.

Tests 3 and 4 on the Mill No. 2 machine show that the conditions on this machine are about the same as they were on the Mill No. 1 machine before the rebuilding.

d. DRIER CONDITIONS:

TABLE 6

	Test 1	Test 2	Test 3	Test 4
Moisture, before driers, per cent	64.50	63.44	65.38	64.63
Moisture, after driers, per cent	0.95	2.17	2.67	1.13
Evaporation, pounds per pound of board	1.81	1.74	1.86	1.82
Steam consumption, pounds per pound of evaporation	1.57	1.89	1.83	2.00
Steam consumption, pounds per pound of board	2.85	3.24	3.41	3.83

Note: The steam consumption includes steam to driers and air preheaters in all tests but Test 1.

The evaporation on both machines is high because of high moisture before the driers and low moisture after the driers. The low outgoing moisture effects high steam consumption per pound of evaporation.

High evaporation and high steam consumption per pound of evaporation effect a high steam consumption per pound of board.

e. EFFECT OF HEATING:

Test 5 was run on the Mill No. 2 machine to determine the effect of the temperature of the *shower water* on the water removal efficiency. One series of tests was run with cold water and another series with warm water in the filler vat showers. Table 7 summarizes the data of these tests.

TABLE 7

Temperatures—deg. F.	Cold Tests	Warm Tests	Difference
Lining stuff box	119.0	108.3	
Filler stuff box	119.5	111.6	
Lining vats, entering stock	94.0	90.0	
Filler vats, entering stock	95.2	115.4	+20.2° F.
Lining cylinder showers	77.5	78.0	
Filler cylinder showers	91.5	118.5	+27.0° F.
Press water from squeeze rolls—1st press	87.3	95.4	+ 8.1° F.
Press water from 2nd and 3rd presses	77.3	81.8	+ 4.5° F.
Machine production			
Speed of the machine, feet per minute	162.3	162.8	+ 0.3%
Production, pounds per minute	70.4	71.9	+ 2.1%

Water Removal on west end, pounds per pound of board

	Cold Tests	Pounds Per cent of Total Removed	Pounds per pound Board Warm Tests	Per cent of Total Removed	Difference
At squeeze rolls	0.98	19.3	0.94	20.4	— 4 per cent
At primary pres srolls	2.63	51.8	2.40	52.0	— 5 per cent
At main presses	1.48	28.9	1.28	27.6	—14 per cent
Total	5.09		4.62		— 9.2 per cent

Water Content in board on wet end, pounds per pound of board

	Cold Tests	Warm Tests	Difference
Water in board			
Before squeeze rolls	6.84	6.34	—7.3 per cent
Before primary press rolls	5.86	5.40	—7.8 per cent
Before first press	3.23	3.00	—6.8 per cent
After third press	1.751	1.724	—1.6 per cent
Steam consumption			
Moisture before driers, per cent	63.65	63.26	
Moisture after driers, per cent	1.10	1.96	
Evaporation, pounds per pound of board	1.74	1.70	
Steam consumption, pounds per pound of board for driers	3.48	3.41	—2.0 per cent
Steam consumption, pounds per pound of board for shower water	0.	0.14	
Total steam consumption	3.48	3.55	+2.0 per cent

White water from the vats was used in the filler cylinder showers without heating in the cold tests. This white water was heated with steam in the warm tests; the temperature increase at the heating was 7.5 deg. F. Due to the recirculation of this water, the actual temperature difference between the two test series was 27.0 deg. F. in the filler cylinder showers, which gives an increase of 20.2 deg. F. in the stock entering the vats. The temperature increase at the rolls and presses, which was effected by using steam on the body showers, was very small.

The warm water effected an increase in the production of about 2 per cent and a small decrease in the moisture before the driers equal to 1.6 per cent of the water content expressed as pound per pound of board.

The water content in the board on the wet end was around 7 per cent lower in the warm tests than in the cold tests. This shows

that the water was pressed out earlier on the machine, largely in the vats, when running with warm water. The steam consumption for the driers was 2 per cent lower in the warm tests due to slightly lower evaporation. When the steam for heating the shower water is added, the total consumption in the warm tests exceeds that of the cold tests by 2 per cent.

Conclusions

The test does not show sufficient increase in water removal on the wet end to make up for the steam consumed in heating the shower water. The increase in speed and production was very small and comes within the accuracy of the tests. We do not feel that the above test is conclusive and plan to repeat it, using higher temperatures.

Discussion of Results

A method to study the water removal conditions of a board machine has been developed. Quite an elaborate series of tests with different grades of paper, at different times of the year and of the week, and finally at different temperatures on the wet end section of the machine were made.

The major factors controlling production are (1) the drying capacity of the machine, (2) the quality of felts used, (3) wetness of stock, (4) efficiency of vats, (5) temperature of stock, and (6) pressure on the presses.

The drying capacity is obviously an economic balance between the number of driers that can be added and increased overhead and maintenance, and is limited by the mechanical difficulties encountered in speeding up the machine.

We believe that information on the mechanism of water removal by felts would be very valuable in determining just what qualities are necessary to give the highest water removal efficiency.

The freeness of the stock undoubtedly has considerable effect on water removal. The type of stock also is of importance. Short fiber, dirt and other foreign materials have a considerable effect, due to filling up of the felts.

The rebuilding of the Mill No. 1 machine vats resulted in a higher efficiency in the water removal at this point. This was compensated for by a correspondingly lower water removal at the primary presses and main presses, so that the moisture in the sheet going to the first drier was practically constant. In test 5 the same effect was noted from an entirely different cause. This test showed the effect on water removal of heating the stock in the vats. There was a slight increase in water removal in the vats but there was less than 0.5 per cent difference in the moisture content of the sheet going to the driers.

These tests indicate that on these two board machines, each equipped with three pairs of squeeze rolls, six pairs of primary presses and three main presses, and using the same kinds of felts, board is delivered to the driers at approximately 64.5 per cent moisture content, or put in another way, the speed of the machine must be regulated to give this moisture content before the driers.

Heating the stock did not result in any material increase in the water removal efficiency in our test. The data obtained, however, were not conclusive. To get the best results the heat should be put into the stock and a means of keeping the felts and presses up to the temperature desired provided.

The water from the second and third presses

TEST 5—Continued

DEWATERING TEST—MILL NO. 1 MACHINE

Date	Test No.	Grade	Temperatures Press Water: Squeeze Rolls	Primary Presses	1st Press	2nd Press	3rd Press	Squeeze Rolls	Primary Presses	1st Press	2nd Press	3rd Press	Total	Lbs. per lb. bone dry stock	Before Squeeze Rolls, Per cent dry	Before Squeeze Rolls, Lbs./lb.	Before Dryer, Per cent dry	Before Dryer, Lbs./lb.	Before heating	After heating	Increase	Lbs./min.	Lbs./lb.	Steam, Lbs./lb.	Per cent Moisture, before	Per cent Moisture, after	Evaporat. Lbs./lb.	Steam, Lbs./lb.	Total Steam, Lbs./lb.
			Water Removal Lbs./min.												Water in Board				Cylinder Showers Temperature Shower Water					Steam Consumption			Dryer		
1	1a	2	13a	13b	13c	13d	13e	23	24	25	26	27	28	29	30	31	40	41	41a	41b	41c	41d	41e	41f	42	43	44	47	47a
			83	82	83	80	..	50.7	116.8	125.0	10.4	..	....	....	....	....	....	....	....	....	....	....	....	....	....	64.65	2.60	....	....	....
			85.5	84	86	81	..	52.0	116.6	136.6	9.2	..	....	....	....	....	....	....	....	....	....	....	....	....	....	64.40	1.34	....	....	....
			88	86	86	83	..	54.3	98.1	126.3	10.8	..	....	....	....	....	....	....	....	....	....	....	....	....	....	63.05	2.98	....	....	....
			87	85	87	82	..	59.3	127.7	118.0	11.6	7.0	....	....	....	....	....	....	....	....	....	....	....	....	....	64.00	1.55	....	....	....
			87	86	86	81	82	58.7	126.4	127.0	10.7	7.2	....	....	....	....	....	....	....	....	....	....	....	....	....	63.20	1.44	....	....	....
			81	84	86	78.5	82.5	57.7	121.1	125.0	11.6	7.1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
10-7-29	1	F. F. Wraps	85.3	84.5	86.0	80.9	81.1	55.5	117.8	126.8	10.7	7.1	317.9	4.58	13.60	6.35	36.14	1.77	90.9	88.2	....	1465	21.1	No Steam	63.86	1.98	1.746	3.492	3.492
			98	94	93.5	82.0	82.5	63.4	160.3	80.0	8.5	5.7	....	....	....	....	....	....	....	....	....	....	....	....	64.00	1.63	....	....	....
			98	93	96	82.0	83	64.7	161.9	80.0	8.3	5.4	....	....	....	....	....	....	....	....	....	....	....	....	63.15	1.57	....	....	....
			99	95	96	83	83	71.0	172.0	80.2	9.1	6.7	326.1	4.53	13.72	6.28	36.42	1.75	110.7	116.2	5.5	1170	16.2	0.087	63.58	1.60	1.730	3.460	3.547
10-8-29	2	Corr. Lin. .016.	98.3	94.0	95.2	82.3	82.8	66.4	164.7	80.1	8.6	6.3	....	....	....	....	....	....	....	....	....	....	....	....	....	63.25	1.09	....	....	....
			89	88	90	76	78	68.7	201.9	97.3	7.9	6.1	....	....	....	....	....	....	....	....	....	....	....	....	....	65.00	....	....	....	....
			89	88	90	76	78	68.7	182.1	97.0	7.1	4.7	370.8	5.09	12.71	6.88	35.85	1.79	97.5	90.9	....	1170	16.2	No Steam	64.15	1.09	1.778	3.556	3.556
10-9-29	3	Corr. Lin. .016.	89.0	88.0	90.0	76.0	78.0	68.7	192.0	97.2	7.5	5.4	....	....	....	....	....	....	....	....	....	....	....	....	....	63.15	1.10	....	....	....
			86	85	86	77	78	68.8	177.9	86.2	6.7	5.8	345.4	5.09	12.83	6.80	36.85	1.71	92.7	92.0	....	1465	21.6	No Steam	63.15	1.10	1.703	3.406	3.406
10-10-29	4	Brown Lined Chip .016.	86	85	86	77	78	68.8	177.9	86.2	6.7	5.8	....	....	....	....	....	....	....	....	....	....	....	....	....	62.90	2.26	....	....	....
			96	93	94	80	82	70.0	175.2	80.3	5.6	5.6	....	....	....	....	....	....	....	....	....	....	....	....	....	63.00	2.35	....	....	....
			98	94	95	80	82	66.5	179.8	82.0	5.8	5.2	337.8	4.70	13.50	6.40	37.05	1.70	111.0	120.5	9.5	1465	20.4	0.190	62.95	2.31	1.677	3.354	3.544
10-10-29	5	Brown Lined Chip .016.	97.0	93.5	94.5	80.0	82.0	68.3	177.5	81.2	5.7	5.4	336.7	....	....	....	....	....	....	....	....	....	....	....	....	62.75	0.49	....	....	....
			82	81	82	78	78	65.5	191.5	88.8	6.4	4.5	355.8	....	....	....	....	....	....	....	....	....	....	....	....	63.10	0.53	....	....	....
			81	80	80	76	76	66.5	189.3	89.3	6.2	4.5	358.0	....	....	....	....	....	....	....	....	....	....	....	....	63.60	0.90	....	....	....
			87	85	86	79	80	68.1	191.2	87.2	5.8	5.1	358.4	....	....	....	....	....	....	....	....	....	....	....	....	63.95	1.09	....	....	....
			86	84	85	79	80	66.5	193.9	86.2	6.4	5.0	357.1	5.20	12.58	6.95	36.35	1.75	70.3	87.0	16.7	1465	21.3	0.340	63.65	0.75	1.744	3.488	3.826
10-11-29	6	Brown Lined Chip .016.	84.0	87.5	83.3	78.0	78.5	66.7	191.5	87.9	6.2	4.8	....	....	....	....	....	....	....	....	....	....	....	Injector Steam	....	....	....	....	....	....

Note—Test No. 6 was run with fresh water in all showers. All other tests with white water in body cylinder showers.

Averages:																														
Cold	3,4			87.3			77.3	68.8	185.0	91.7	7.1	5.6	358.1	5.09	12.77	6.84	36.35	1.75	....	....	....	....	....	....	....	63.65	1.10	1.741	3.481	3.481
Hot	2,5			95.4			81.8	67.4	171.1	80.7	7.2	5.9	332.0	4.62	13.61	6.34	36.74	1.73	110.9	118.4	7.5	1318	18.3	0.139	63.26	1.96	1.704	3.407	3.546

TEST 2

DEWATERING TEST—MILL NO. 1 MACHINE

Date	Grade	Machine Operation Data: Speed ft./min.	Weighted prod. lbs./24 hrs.	Actual prod. (with 4% trim added)	Moisture at reel %	Actual prod. lbs. bone dry	Down time hours	Production Lbs./min. bone dry	Temperatures of Stock—Stuff Boxes: Lining °F.	Stuff Boxes: Body °F	Vats: Lining °F.	Vats: Body °F	Pressure at Presses—1st press: Lbs. front	1st press: Lbs. back	1st press: Lbs./in.	2nd press: Lbs. front	2nd press: Lbs. back	2nd press: Lbs./in.	3rd press: Lbs. front	3rd press: Lbs. back	3rd press: Lbs./in.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	F. C. Body .025		12,220																		
6— 3—29	F. C. Lined .022	200	207,890	228,510	6.60	213,400	1¼														
	F. C. Lined .022		15,870						117	117	99	112	8160	7660	215.0	1320	1300	105.1	1360	920	102.4
6— 4—29	F. C. Body .025	197	231,740	257,500	5.78	242,600		168.5		121		99	8160	7660	215.0	1320	1320	105.2	1360	890	102.1
6— 5—29	F. C. Body .025	195	216,800	225,500	7.70	208,100	2	157.5		121		102	8160	7660	215.0	1320	1300	105.1	1370	830	101.7
	F. C. Body .025		22,640																		
6— 6—29	F. C. Lined .022	198	215,630	247,800	4.80	235,900		163.8	113	118	95	107	8340	7660	216.8	1280	1280	104.8	1320	740	100.5
6— 7—29	F. C. Lined .022	195	228,140	237,300	5.80	223,500		155.2	130	121	101	111	8160	7660	215.0	1260	1300	104.8	1330	760	100.8
	F. C. Lined .022		15,810																		
	F. C. Body .025		6,070																		
	B. B. .027		27,060																		
	B. B. .017		20,800																		
	B. B. .022		118,320																		
6— 8—29	F. C. Body .023	182	18,070	214,400	...	.....															
Week No. 1		195		235,170	6.14	224,700	0.54 hrs.	161.3	120	120	98	106			215.4			105.0			101.5
	F. C. Body .023		84,680																		
6—10—29	F. C. Body .025	196	134,820	228,300	6.45	213,500	1½	158.2	...	114	(90)	103	8660	8660	227.5	1370	1140	104.1	860	0	90.7
	F. C. Body .025		16,150																		
6—11—29	F. C. Lined .022	192	208,040	233,200	5.48	220,400		153.2	124	122	98	110	8660	8660	227.5	1190	1140	102.7	1320	0	94.4
6—12—29	F. C. Lined .022	192	221,860	230,700	5.18	218,700		151.7	127	125	101	114	9170	8660	232.0	1030	1140	101.0	0	0	83.5
	F. C. Lined .022		16,910																		
6—13—29	F. C. Body .025	185	223,430	250,000	6.68	233,300		162.0	...	126	(100)	114	9170	8660	232.0	780	1140	99.3	0	0	83.5
	F. C. Body .025		206,730																		
6—14—29	F. C. Body .033	177	14,810	230,400	6.38	215,700		149.5	...	121	(99)	112	8660	8660	227.5	0	0	83.5	0	0	83.5
	F. C. Body .033		169,070																		
	Nep. B. B. .032		49,210																		
6—15—29	F. C. Body .025	148	7,370	234,700	5.18	222,600		154.5	...	123	(100)	109	8660	8560	227.5	0	0	83.5	0	0	83.5
Week No. 2		182		234,550	5.89	220,700	0.25 hrs.	154.5	126	122	98	110			229.0			95.7			86.5
6—17—29	F. C. Lined 0.16	215	169,770	176,600	5.00	167,800	1½		120	114	108	102	9000	8330	227.5	630	1170	98.3	0	0	83.5
	F. C. Lined .016		13,170																		
6—18—29	F. C. Lined .022	190	190,460	211,800	(5.32)	200,500	1½	148.4	124	127	113	106	8660	8000	222.0	630	1170	98.3	0	0	83.5
	F. C. Lined .022		218,290																		
6—19—29	Shingle Finish	190	9,870	237,300	5.55	224,200		155.6	126	123	116	107	8660	8000	222.0	630	1170	98.3	0	0	83.5
	F. C. Lined .022		42,580																		
6—20—29	Shingle Finish	185	168,090	219,300	(5.32)	207,600	1	158.5	125	114	104	108	9000	8000	225.0	780	1170	99.5	0	0	83.5
	F. C. Lined .022		65,290																		
6—21—29	Shingle Finish	185	149,210	223,100	5.40	212,200		147.4	133	120	107	114	9000	8000	225.0	780	1170	99.5	0	0	83.5
	F. C. Lined .022		46,110																		
	F. L. B. .023		14,330																		
	Tube Paper .024		4,560																		
	Shoe Lid .024		15,660																		
6—22—29	Nep. B. B. .032	160	133,370	222,600	(5.32)	210,800															
Week No. 3		188		215,120	5.32	203,700	0.67 hrs.	152.5	126	120	110	107			224.3			98.6			83.5
	Nep. B. B. .032		15,610																		
6—24—29	F. C. Body .023	193	206,090	230,600	6.13	216,500	50 min.	156.0		122	(99)	108	8000	8660	222.0	600	1370	99.8	1370	1370	106.1
6—25—29	F. C. Body .025	185	238,440	248,000	6.45	232,000	15 min.	163.0		127	(102)	106	8000	8660	222.0	1370	1370	106.1	1370	1370	106.1
	F. C. Body .025		116,610																		
6—26—29	F. C. Lined .022	195	117,610	243,600	5.18	231,000	1 hr. 20 min.	169.0		126	(104)	110	8000	8660	222.0	1370	1340	105.9	1370	1340	105.9
	F. C. Lined .022		161,400																		
	F. C. Body .025		7,830																		
6—27—29	Shoe Lid .024	180	49,570	227,600	5.60	214,900		149.0	129	128	103	110	8660	8660	227.5	1370	1260	105.3	1370	1320	105.7
	Shoe Lid .024		192,570																		
6—28—29	F. C. Body .025	177	9,150	209,800	5.45	198,400		140.0		112	(96)	98	8660	8660	227.5	1370	1260	105.3	1370	1320	105.7
6—29—29	F. C. Body .025	180	221,630	230,500	5.10	218,800		151.0		121	(101)	107	8660	8660	227.5	1370	1260	105.2	1370	1320	105.7
Week No. 4		185		231,680	5.65	218,600	0.40 hrs.	154.7	129	123	101	107			224.8			104.6			105.3

TEST 2—Continued

DEWATERING TEST—MILL NO. 1 MACHINE

Drier Conditions

TEST 2—Continued

DEWATERING TEST—MILL NO. 1 MACHINE

Date	Grade	Water Removal Lbs./min.							Water Content in Board on Wet End											Drier Conditions							
		Squeeze Rolls	Primary Presses	1st press	2nd press	3rd press	Total	Lbs. per lb. bone dry stock	Before Squeeze Rolls		Before Primary Presses		Before 1st press		Before 2nd press		Before 3rd press		Before Drier		% Water		Evaporation	Steam Consumption				
									Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Before drier	After drier	Lbs./lb. bone dry stock	Lbs./24 hrs.	Lbs./24 hrs.	Lbs./lb. bone dry stock	Lbs. steam per lb. evaporation	New felts put on
1	2	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
6— 3—29	F. C. Body .025... F. C. Lined .022... F. C. Lined .022...	.. .	....	...	...	...	....	...	...	...	...	...	...	...	...	...	...	...	32.9	2.04	67.1	3.9	2.001	426,000	771,200	3.61	1.80	All felts new
6— 4—29	F. C. Body .025...	176	526	85.7	12.5	8.54	809	4.80	...	6.66	...	5.62	...	2.50	...	1.99	...	1.92	34.9	1.87	65.1	1.5	1.850	449,000	747,600	3.08	1.67	
6— 5—29	F. C. Body .025... F. C. Body .025...	181	528	77.0	11.5	6.35	804	5.10	...	6.93	...	5.78	. .	2.43	...	1.94	...	1.87	35.4	1.83	64.6	1.9	1.806	376,000	700,000	3.36	1.86	
6— 6—29	F. C. Lined .022...	171	510	29.2	11.2	5.93	727	4.44	...	6.31	...	5.27	...	2.15	...	1.97	...	1.90	35.0	1.86	65.0	0.9	1.848	435,000	752,400	3.19	1.73	
6— 7—29	F. C. Lined .022... F. C. Lined .022 .. F. C. Body .025... B. B. .027..... B. B. .017..... B. B. .022.....	118	485	25.2	10.5	3.40	642	5.41	...	6.04	...	5.28	...	2.15	...	1.99	...	1.92	33.9	1.90	66.1	1.5	1.879	420,000	779,800	3.49	1.85	
6— 8—29	F. C. Body .023...	....	....	...	...	...	....	...	...	...	...	..	...	...	...	...	...	...	...	...	...	..	....	.....	.....	...	...	
Week No. 1	F. C. Body .023 ..	161.5	512.3	59.3	11.4	6.05	750.6	4.65	13.3	6.56	15.3	5.56	29.6	2.39	33.2	2.02	33.9	1.95	34.4	1.91	65.6	1.9	1.887	424,000	750,200	3.34	1.77	
6—10—29	F. C. Body .025... F. C. Body .025...	179	360	22.5	14.6	5.54	582	3.68	...	5.55	...	4.42	...	2.14	...	2.00	...	1.91	34.8	1.87	65.2	2.4	1.849	395,000	754,600	3.53	1.90	
6—11—29	F. C. Lined .022...	167	354	65.2	14.4	5.11	606	3.96	..	5.72	...	4.63	...	2.32	...	1.89	...	1.80	36.1	1.77	63.9	2.8	1.741	374,000	787,600	3.57	2.10	
6—12—29	F. C. Lined .022... F. C. Lined .022...	153	385	59.2	10.4	(5.33)	613	4.05	...	5.81	...	4.80	...	2.27	...	1.88	...	1.81	36.1	1.77	63.9	2.1	1.748	383,000	774,400	3.54	2.02	
6—13—29	F. C. Body .025... F. C. Body .025...	148	403	71.3	13.2	(5.33)	641	3.95	...	5.64	...	4.72	...	2.23	...	1.79	...	1.71	37.2	1.68	62.8	2.4	1.663	389,000	666,000	3.09	1.71	
6—14—29	F. C. Body .033... F. C. Body .033... Nep. B. B. .032...	169	428	63.9	(13.2)	(5.33)	679	4.54	...	6.25	...	5.12	...	2.25	...	1.82	...	1.73	37.2	1.69	62.8	1.7	1.670	360,000	668,000	3.10	1.85	
6—15—29	F. C. Body .025...	121	373	61.3	(13.2)	(5.33)	574	3.72	...	5.37	...	4.59	...	2.18	...	1.78	...	1.69	37.5	1.66	62.5	2.1	1.644	367,000	645,400	2.86	1.75	
Week No. 2		156.2	383.8	57.2	13.2	5.33	615.7	3.98	14.9	5.71	17.5	4.70	31.1	2.22	35.1	1.85	35.3	1.76	36.5	1.73	63.5	2.3	1.713	378,000	716,000	3.24	1.89	
6—17—29	F. C. Lined .016... F. C. Lined .016...	....	....	...	...	...	....	...	...	...	...	...	...	...	...	...	...	...	29.0	2.45	71.0	2.9	2.419	405,000	606,600	3.62	1.50	All felts new
6—18—29	F. C. Lined .022... F. C. Lined .022...	65	(454)	52.7	7.0	3.1	582	3.92	...	...	...	...	...	...	...	...	...	...	...	...	...	..	....	.....	674,200	3.78	...	
6—19—29	Shingle Finish .... F. C. Lined .022...	118	478	55.5	11.5	2.6	666	4.28	...	6.07	...	5.31	...	2.24	...	1.88	...	1.81	35.9	1.79	64.1	2.6	1.759	395,000	721,400	3.21	1.83	
6—20—29	Shingle Finish ..... F. C. Lined .022...	125	450	(55.3)	(10.5)	(3.4)	644	4.06	...	...	...	...	...	...	...	...	...	...	...	...	...	..	....	.....	688,000	3.32	...	
6—21—29	Shingle Finish .... F. C. Lined .022... F. L. B. .023..... Tube Paper .024... Shoe Lid .024	109	435	57.7	12.9	4.4	619	4.20	...	5.96	...	5.22	...	2.27	...	1.88	...	1.79	36.2	1.76	63.8	1.7	1.745	370,000	708,000	3.34	2.12	
6—22—29	Nep. B. B. .032....	....	....	...	...	...	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	....	.....	683,200	3.24	...	
Week No. 3	Nep. B. B. .032....	104.3	454.3	55.3	10.5	3.4	627.8	4.22	14.1	6.09	15.6	5.40	29.2	2.43	32.6	2.07	33.4	2.00	33.7	1.98	66.3	2.1	1.955	397,000	680,200	3.35	1.72	
6—24—29	F. C. Body .023 ...	167	495	53.1	(11.7)	11.6	738	4.73	...	6.37	...	5.30	...	2.13	...	1.79	...	1.71	37.9	1.64	62.1	3.6	1.601	346,000	707,000	3.26	2.04	New press felts
6—25—29	F. C. Body .025... F. C. Body .025...	143	486	50.7	(11.7)	7.0	698	4.30	...	5.75	...	4.87	...	1.89	...	1.58	...	1.51	40.5	1.47	59.5	2.2	1.446	336,000	692,000	2.98	2.06	
6—26—29	F. C. Lined .022 .. F. C. Lined .022... F. C. Body .025...	163	556	46.6	(11.7)	6.1	786	4.64	...	6.19	...	5.23	...	1.94	...	1.66	...	1.59	38.3	1.55	61.7	2.7	1.525	352,000	626,000	2.71	1.78	
6—27—29	Shoe Lid .024..... Shoe Lid .024.....	147	474	52.8	(11.7)	8.6	694	4.65	...	6.29	...	5.30	...	2.13	...	1.78	...	1.70	37.9	1.64	62.1	2.1	1.616	364,000	583,000	2.71	1.60	
6—28—29	F. C. Body .025...	125	460	45.5	(11.7)	6.8	649	4.64	...	6.29	...	5.40	...	2.11	...	1.78	...	1.70	37.8	1.65	62.2	2.9	1.616	321,000	609,000	3.07	1.90	
6—29—29	F. C. Body .025...	136	486	48.2	(11.7)	8.6	691	4.58	...	6.16	...	5.26	...	2.04	...	1.72	...	1.64	38.8	1.58	61.2	2.0	1.556	341,000	689,000	3.14	2.02	
Week No. 4		146.8	492.8	49.5	(11.7)	8.1	708.9	4.58	13.9	6.17	16.1	5.22	33.0	2.04	36.8	1.72	38.0	1.64	38.5	1.59	61.5	2.6	1.560	342,000	651,000	2.98	1.90	

TEST 2—Continued

DEWATERING TEST—MILL NO. 1 MACHINE

Date	Grade	Machine Operation Data: Speed ft./min.	Weighed prod. lbs./24 hrs.	Actual prod. (with 4% trim added)	Moisture at reel %	Actual prod. lbs. bone dry	Down time hours	Production Lbs./min. bone dry	Temperature of Stock: Stuff Boxes Lining °F.	Stuff Boxes Body °F	Vats Lining °F.	Vats Body °F	Pressure at Presses: 1st press Lbs. front	1st press Lbs. back	1st press Lbs./in.	2nd press Lbs. front	2nd press Lbs. back	2nd press Lbs./in.	3rd press Lbs. front	3rd press Lbs. back	3rd press Lbs./in.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	Tube Paper .025....		3,520																		
	F. C. Body .025....		67,430																		
7— 1—29	F. C. Body .033....	155	127,070	205,900	4.85	195,900	50 min.	140.0		118	(96)	106	8660	8660	227.5	920	1260	101.5	1260	1260	104.3
7— 2—29	F. C. Body .033....	145	232,200	241,500	6.50	225,800		157.0		124	(99)	111	8000	8660	222.0	....	....	....	1260	1200	102.1
	F. C. Body .033....		70,550																		
7— 3—29	F. C. Body .025....	168	157,610	237,200	6.25	222,400		155.0		122	(98)	108	8000	8660	222.0	....	....	....	1370	1140	104.3
Week No. 5		156		228,200	5.87	214,700	0.28 hrs.	150.7		121	(98)	108			223.8			101.5			103.5
	F. C. Body .025....		49,880																		
	F. C. Body .023....		15,160																		
7— 8—29	F. C. Lined .022....	179	125,590	198,200	6.50	185,300	1 hr. 20 min.	136.0		105	(97)	102	7000	7320	202.5	920	1050	99.8	880	1110	99.9
7— 9—29	F. C. Lined .022....	183	210,380	218,900	6.20	205,300		142.0		120	(102)	110	9170	7320	220.5	660	1050	97.7	870	860	97.8
7—10—29	F. C. Lined .022....	187	179,970	187,200	(5.88)	176,200	2 hrs. 50 min.	139.0		117	(102)	109	9170	7660	223.5	710	1050	98.1	870	860	97.8
7—11—29	F. C. Lined .022....	193	219,380	228,200	6.90	212,400		148.0		122	(103)	108	9170	8000	226.0	1280	1370	105.4	1230	1270	104.2
7—12—29	F. C. Lined .022....	193	224,440	233,400	4.90	222,000		154.0		116	(107)	112	9170	8000	226.0	1270	660	99.5	1170	1030	101.6
7—13—29	F. C. Lined .022....	193	214,930	223,500	4.90	212,600	0.2 hrs.	148.0		120	(106)	113	9170	8000	226.0	1280	0	94.0	1200	1030	101.9
Week No. 6		188		214,900	5.88	202,300	0.73 hrs.	144.5		117	(103)	109			223.8			99.1			100.7
	F. C. Body .023....		17,160																		
	F. C. Body .025....		6,340																		
	F. C. Body .033....		8,820																		
	Shoe Lid .024.....		125,940																		
7—15—29	Shoe Box .031.....	175	56,350	223,200	5.60	210,700	1 hr. 30 min.	156.0		123	(100)	114	8660	8660	227.5	1020	1370	103.2	1370	920	102.4
	F. C. Body .017....		55,610																		
	F. C. Body .023....		5,560																		
	F. C. Body .025....		8,700																		
	F. C. Body .033....		81,420																		
7—16—29	Shoe Box .031.....	169	63,170	223,100	5.90	209,900		145.6		120	(101)	113	8660	8660	2275.	1370	1370	106.1	1370	920	102.4
	F. C. Body .017....		61,250																		
	F. C. Body .025....		8,890																		
7—17—29	F. C. Body .033....	171	146,250	225,100	5.20	213,400	45 min.	153.0		122	(101)	116	10840	8660	246.0	1370	1370	106.1	1370	920	102.4
	F. C. Body .017....		16,620																		
	F. C. Body .023....		8,250																		
7—18—29	F. C. Body .025....	185	204,600	238,700	5.60	225,300		156.5		118	(108)	112	10840	8660	246.0	1370	1370	106.1	1370	920	102.4
	F. C. Body .025....		199,150																		
7—19—29	Am. B. Body .026..	178	23,360	231,400	5.30	201,400	1 hr. 15 min.	147.5	115	119	99	112	10840	8660	246.0	1370	1370	106.1	1370	920	102.4
	Am. B. Body .026..		37,860																		
	Nep. B. Body .032..		60,470																		
	F. C. Body .025....		40,410																		
7—20—29	F. C. Body .033....	157	65,760	212,700			1 hr. 10 min.														
Week No. 7		172		225,600	5.52	212,160	0.78 hrs.	151.7	115	120	102	113			238.6			105.5			102.4
Grand Ave.		180.9		226,460	5.75	213,860	0.52 hrs.	152.8	123.2	120.4	101.4	108.2			225.24			101.43			97.72

TEST 2—Continued

DEWATERING TEST—MILL NO. 1 MACHINE

Date	Grade	Water Removal Lbs./min.							Water Content in Board on Wet End												Drier Conditions							
		Squeeze Rolls	Primary Presses	1st press	2nd press	3rd press	Total	Lbs. per lb. bone dry stock	Before Squeeze Rolls		Before Primary Presses		Before 1st press		Before 2nd press		Before 3rd press		Before Drier		% Water		Evaporation		Steam Consumption			New felts put on
									Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Per cent	Lbs./Lb.	Before drier	After drier	Lbs./lb. bone dry stock	Lbs./24 hrs.	Lbs./24 hrs.	Lbs./lb. bone dry stock	Lbs. steam per lb. evaporation	
1	2	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
	Tube Paper .025...																											
	F. C. Body .025...																											
7— 1—29	F. C. Body .033...	(93.2)	286	(79.6)	Hoisted up	(9.7)	469	3.34	...	5.11	...	4.44	...	2.42	...	1.85	...	1.85	35.9	1.78	64.1	1.5	1.769	346,000	699,000	3.56	2.02	New top felt
7— 2—29	F. C. Body .033...	91.1	298	80.1	Hoisted up	9.4	479	3.05	...	4.79	...	4.21	...	2.31	...	1.80	...	1.80	36.5	1.74	63.5	1.7	1.721	388,000	719,000	3.18	1.85	
	F. C. Body .033...																											
7— 3—29	F. C. Body .025...	95.3	320	79.1	Hoisted up	10.0	504	3.25	...	4.87	...	4.25	...	2.19	...	1.68	...	1.68	38.2	1.62	61.8	1.8	1.600	356,000	699,000	3.14	1.96	
Week No. 5		93.2	301.3	79.6	...	9.7	483.8	3.21	16.9	4.92	18.5	4.30	30.3	2.30	36.1	1.77	36.1	1.77	36.9	1.71	63.1	1.7	1.693	364,000	705,700	3.29	1.94	
	F. C. Body .025...																											
	F. C. Body .023...																											
7— 8—29	F. C. Lined .022...	90.5	452	27.7	(11.7)	6.1	588	4.32	...	6.05	...	5.38	...	2.06	...	1.86	...	1.77	36.8	1.72	63.2	2.8	1.688	313,000	689,000	3.17	2.20	Bottom felt
7— 9—29	F. C. Lined .022...	116.5	491	37.1	(11.7)	5.6	662	4.66	...	6.62	...	5.80	...	2.34	..	2.08	...	2.00	33.8	1.96	66.2	2.2	1.934	398,000	721,000	3.52	1.81	
7—10—29	F. C. Lined .022...	104.3	486	56.5	(11.7)	7.8	666	4.80	...	6.62	...	5.87	...	2.37	...	1.96	...	1.88	35.5	1.82	64.5	2.7	1.791	316,000	722,000	4.10	2.28	Bottom felt
7—11—29	F. C. Lined .022...	115.4	424	87.1	(11.7)	5.8	706	4.77	...	6.13	...	5.35	...	2.49	...	1.90	...	1.82	36.0	1.78	64.0	4.2	1.733	368,000	802,000	3.77	2.18	
7—12—29	F. C. Lined .022...	157.0	459	72.5	(11.7)	6.1	706	4.59	...	6.34	...	5.32	...	2.34	...	1.87	...	1.79	36.4	1.75	63.6	1.8	1.731	384,000	695,000	3.13	1.81	
7—13—29	F. C. Lined .022...	148.6	445	76.9	(11.7)	10.6	693	4.68	...	6.38	...	5.38	...	2.38	...	1.86	...	1.78	36.9	1.71	63.1	3.8	1.672	356,000	644,000	3.03	1.81	
Week No. 6		122.1	459.5	59.6	(11.7)	7.0	659.9	4.56	13.6	6.37	15.4	5.52	30.0	2.34	34.1	1.93	35.2	1.85	35.9	1.80	64.1	2.9	1.768	358,000	712,200	3.51	1.99	
	F. C. Body .023...																											
	F. C. Body .025...																											
	F. C. Body .033...																											
	Shoe Lid .024.....																											
7—15—29	Shoe Box .031.....	209	508	48.8	(11.7)	7.8	785	5.03	...	6.62	...	5.28	...	2.03	...	1.72	...	1.64	38.6	1.59	61.4	1.7	1.573	332,000	716,000	3.40	2.16	
	F. C. Body .017...																											
	F. C. Body .023...																											
	F. C. Body .025...																											
	F. C. Body .033...																											
7—16—29	Shoe Box .031.....	180	519	42.9	(11.7)	5.0	759	5.21	...	6.02	...	4.78	...	1.90	...	1.61	...	1.53	40.1	1.49	59.9	1.5	1.477	310,000	626,000	2.99	2.02	
	F. C. Body .017...																											
	F. C. Body .025...																											
7—17—29	F. C. Body .033...	142	532	46.9	(11.7)	4.5	737	4.82	...	6.56	...	5.63	...	1.88	...	1.57	...	1.49	40.7	1.46	59.3	1.7	1.441	308,000	598,000	3.16	1.94	
	F. C. Body .017...																											
	F. C. Body .023...																											
7—18—29	F. C. Body .025...	187	547	50.1	(11.7)	4.9	801	5.12	...	6.02	...	4.83	...	1.91	...	1.59	...	1.52	40.1	1.49	59.9	1.7	1.475	332,000	631,000	2.80	1.90	
	F. C. Body .025...																											
7—19—29	Am. B. Body .026..	172	532	47.0	(11.7)	3.9	767	5.20	...	6.68	...	5.51	...	1.91	...	1.59	...	1.51	40.3	1.48	59.7	1.7	1.464	295,000	614,000	3.05	2.08	
	Am. B. Body .026..																											
	Nep. B. Body .032..																											
	F. C. Body .025...																											
7—20—29	F. C. Body .033...																											New top felt
Week No. 7		178.0	527.6	47.2	(11.7)	5.2	769.7	5.08	13.2	6.58	15.6	5.41	34.1	1.93	38.3	1.62	39.5	1.53	40.0	1.50	60.0	1.7	1.483	315,400	637,000	3.00	2.02	
Grand Ave.		137.5	447.4	58.3	11.5	6.4	658.1	4.33	14.1	6.08	16.2	5.18	30.7	2.26	34.8	1.88	35.7	1.80	36.54	1.76	63.44	2.17	1.737	368,000	693,200	3.24	1.89	

TEST 4

DEWATERING TEST—MILL NO. 2 MACHINE

Date	Grade	Machine Operation Data: Speed, Ft./min.	Weighed Production, Lbs./24 hours	Actual Production, (with 3% trim added)	Moisture at Reel, per cent	Actual Production, pounds bone dry	Down Time, hours	Production, Pounds/min, bone dry	Temperatures, deg. F.: Stock: Stuff Boxes: Lining	Stock: Stuff Boxes: Body	Stock: Vats: Lining	Stock: Vats: Body	Press Water: Squeeze Rolls	Press Water: Primary Presses	Press Water: 1st Press	Press Water: 2nd Press	Press Water: 3rd Press	Pressure at Presses: 1st Press: Pounds, Front	1st Press: Pounds, Back	1st Press: Pounds/in.	Pressure at Presses: 2nd Press: Pounds, Front	2nd Press: Pounds, Back	2nd Press: Pounds/in	Pressure at Presses: 3rd Press: Pounds, Front	3rd Press: Pounds, Back	3rd Press: Pounds/in.
1	2	3	4	5	6	7	8	9	10	11	12	13	13a	13b	13c	13d	13e	14	15	16	17	18	19	20	21	22
	Std. Index Body 29 lb....		50,355																							
	Std. Index Body 37 lb....		51,990																							
7-22-29	Tube Paper .031.....	135	1,635	107,000	4.2	102,500	2 hrs.50 min.	79.5	...	103	(97)	94	....	....	....	....	....	5750	4860	169.8	2750	2710	113.6	1880	2710	105.2
	Std. Index Body 37 lb....		19,325																							
	Rosin Siz. Shea. 28½ lb...		44,015																							
7-23-29	Shoe Lid 0.24.....	140	16,145	81,900	4.6	78,100	.....	54.4	...	122	(102)	101	....	....	....	....	....	5750	4860	169.8	2750	2710	113.6	1880	2710	105.2
	Shoe Lid 0.24.....		8,765																							
7-24-29	Shoe Lid .025.....	120	101,460	113,500	5.5	107,300	.....	74.5	118	124	102	104	....	....	....	....	....	5750	5000	171.2	2750	2880	115.5	1880	2620	103.2
	Shoe Lid .025.....		11,305																							
7-25-29	Corr. Lined .030-135.....	94	72,955	86,800	6.2	81,400	2 hrs.	61.7	133	129	106	104	....	....	....	....	....	3780	5000	148.8	3040	3420	124.4	1150	2620	95.4
	Shoe Lid .025.....		12,005																							
	Shoe Box .030.....		53,035																							
7-26-29	Corr. Lined .030-135.....	98	34,600	102,600	6.1	96,300	30 min.	68.3	125	134	103	107	....	....	....	....	....	6000	4330	166.6	2660	3170	117.7	0	2670	83.5
	Shoe Box .030.....		3,650																							
7-27-29	Shoe Lid .024.....	120	95,080	101,700	(5.3)	96,300	.....	66.8	...	...	...	...	....	....	....	....	....	....	....	....	....	....	....	....	....	...
Week	No. 1.....	118	.....	98,920	5.3	96,350	0.89 hrs.	67.5	125	122	102	102	....	....	....	....	....	....	....	165.2	....	....	117.0	....	....	98.5
	Shoe Lid .024.....		4,400																							
7-29-29	Corr. Lined .016.....	140	84,755	91,900	3.6	88,600	1 hr. 15 min.	65.0	131	118	109	105	101	100	102	93	93	6110	4750	172.4	1710	1330	87.3	2420	1790	100.1
	Corr. Lined .016.....		26,175																							
	Tube Paper .021.....		3,200																							
	Over Powder Wad. .020..		6,160																							
	Over Powder Wad. .027..		2,020																							
7-30-29	F. F. Wraps .016.....	143	48,185	88,300	3.7	85,000	.....	59.1	130	117	102	98	95	94	95	89	90	6110	4000	164.2	1710	1330	87.3	2540	1830	101.7
	F. F. Wraps .016.....		29,225																							
7-31-29	F. F. Wraps .021.....	136	66,165	98,300	3.9	94,500	.....	65.6	123	111	101	98	94	94	94	83	....	6440	4000	168.0	1750	1330	87.8	0	0	54.3
	F. F. Wraps .021.....		18,560																							
8-1-29	Corr. Lined .016.....	144	75,240	96,600	4.9	91,900	.....	63.8	128	125	99	98	95	93	94	87	....	6440	5750	186.8	0	0	54.3	0	0	54.3
8-2-29	Corr. Lined .016.....	150	87,690	90,300	3.6	87,000	.....	60.3	141	119	103	101	94	92	94	83	....	6440	5750	186.8	0	0	54.3	0	0	54.3
	Corr. Lined .016.....		26,920																							
	Corr. Lined .030.....		23,135																							
8-3-29	Tube Paper .025.....	105	1,015	104,100	4.0	99,900	.....	69.3	136	126	107	101	100	95	97	85	....	6620	5750	188.8	0	0	54.3	0	0	54.3
Week	No. 2.....	136	.....	94,920	4.0	91,150	0.21 hrs.	63.5	132	119	104	100	96.5	94.7	96.0	86.7	(91.5)	....	....	177.8	....	....	70.9	....	....	69.8
	Amer. Screw .025.....		1,470																							
9-9-29	Corr. Lined .030-135.....	91	82,965	86,600	(4.8)	82,500	1 hr. 50 min.	62.0	...	...	...	...	....	....	....	....	....	....	....	....	....	....	....	....	....	...
	Corr. Lined .030-135.....		10,720																							
	Shoe Box .020.....		50,885																							
9-10-29	Shoe Lid .024.....	133	37,385	102,000	4.7	97,200	.....	67.5	...	143	100	103	98	97	98	90	89	3540	3680	133.0	1620	1315	86.2	2250	3020	111.5
	Shoe Lid .024.....		62,065																							
	Corr. Lined .030-135.....		34,745																							
9-11-29	Brown L. Chip .016.....	97	1,940	101,700	5.1	96,600	.....	67.0	125	128	101	102	95	94	95	86	86	2890	3760	126.7	1210	605	74.1	2250	2830	109.5
	Brown L. Chip .016.....		82,005																							
	Chip Board .016.....		2,270																							
9-12-29	Shoe Box .016.....	130	11,200	98,300	4.5	94,000	.....	65.2	106	130	92	99	91	90	91	85	83	3680	5000	148.4	260	0	57.2	2520	2710	111.1
	Shoe Box .016.....		29,690																							
9-13-29	Corr. Lined .016-100.....	146	52,525	84,700	4.8	80,600	1 hr. 10 min.	58.9	...	122	96	95	96	98	94	79	76	3420	5000	146.0	0	0	54.3	2670	2710	112.7
	Corr. Lined .016-100.....		15,255																							
9-14-29	F. F. Wraps .021.....	139	90,075	108,500	5.0	103,000	.....	71.6	137	124	105	104	97	95	97	87	86	3330	5000	145.0	0	0	54.3	2670	2710	112.7
Week	No. 3.....	123	.....	97,970	4.8	92,320	0.50 hrs.	65.4	123	129	99	101	95.4	94.8	95.0	85.4	84.0	....	....	139.8	....	....	65.2	....	....	111.5
Grand	Average	125.7	.....	97,270	4.70	92,370	0.53 hrs.	65.5	126.7	123.3	101.7	101.0	96.0	94.8	95.5	86.1	85.4	....	....	160.9	....	....	84.4	....	....	93.3

TEST 4—Continued

DEWATERING TEST—MILL NO. 2 MACHINE

Date	Grade	Water Removal Lbs./min.							Water Content in Board on Wet End												Dryer Conditions						
		Squeeze Rolls	Primary Presses	First Press	Second Press	Third Press	Total	Lbs. per lb. bone dry stock	Before Squeeze Rolls, %	Lbs./lb.	Before Primary Presses	Lbs./lb.	Before 1st Press, %	Lbs./lb.	Before 2nd Press, %	Lbs./lb.	Before 3rd Press, %	Lbs./lb.	Before Dryer, %	Lbs./lb.	Per Cent Water Evaporation Before Dryer	After Dryer	Lbs. per lb. bone dry stock	Pounds/24 hours	Steam Consumption Pounds/24 hours	Lbs. per lb. bone dry stock	Lbs. Steam per lb. evap'd
1	2	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
	Std. Index Body 29 lb.																										
	Std. Index Body 37 lb.																										
7-22-29	Tube Paper .031	49.6	164.4	71.5	4.6	3.3	293.4	3.79	15.8	5.32	17.5	4.70	27.5	2.64	36.5	1.74	37.3	1.68	37.8	1.64	62.2	1.4	1.630	167,000	(Steam recorder wrong)		
	Std. Index Body 37 lb.																										
	Rosin Siz. Shea. 28½ lb.																										
7-23-29	Shoe Lid .024	47.9	184.9	75.2	4.2	3.0	315.2	5.80	12.0	7.37	13.4	6.49	23.5	3.09	37.0	1.71	38.1	1.63	39.1	1.57	60.9	1.1	1.545	120,700			
	Shoe Lid .024																										
7-24-29	Shoe Lid .025	33.5	208.8	75.1	5.7	2.9	326.0	4.38	14.4	5.92	15.2	5.57	26.5	2.77	36.3	1.76	37.3	1.68	37.8	1.64	62.2	1.2	1.632	175,000			
	Shoe Lid .025																										
7-25-29	Corr. Lined .030-135	27.1	160.7	72.9	8.3	2.8	367.9	5.96	14.5	5.89	15.5	5.45	24.1	3.15	33.7	1.97	35.2	1.84	35.9	1.79	64.1	2.8	1.757	143,000			
	Shoe Lid .025																										
	Shoe Box .030																										
7-26-29	Corr. Lined .030-135	19.8	231.8	100.4	6.4	2.2	360.6	5.29	12.5	7.02	13.1	6.73	22.6	3.43	33.8	1.96	35.9	1.87	35.2	1.84	64.8	1.0	1.830	176,300			
	Shoe Box .030																										
7-27-29	Shoe Lid .024	...	....	....	..	..	....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	....	.....			
	Week No. 1	35.6	190.6	79.0	5.8	2.8	332.6	4.92	13.6	6.35	14.7	5.82	25.0	3.00	35.3	1.83	36.5	1.74	37.2	1.70	62.8	1.5	1.679	157,200			
	Shoe Lid .024																										
7-29-29	Corr. Lined .016	40.2	226.8	114.6	5.1	3.6	390.3	6.00	11.2	7.93	12.0	7.31	20.7	3.82	32.7	2.06	33.6	1.98	34.3	1.92	65.7	0.4	1.911	169,000			
	Corr. Lined .016																										
	Tube Paper .021																										
	Over Powder Wad. .020																										
	Over Powder Wad. .027																										
7-30-29	F. F. Wraps .016	35.9	209.3	96.5	3.5	3.1	348.3	5.89	11.5	7.71	12.3	7.10	21.9	3.57	34.0	1.94	34.7	1.88	35.3	1.83	64.7	3.8	1.792	152,200			
	F. F. Wraps .016																										
7-31-29	F. F. Wraps .021	38.3	232.5	118.0	3.5	0	292.3	4.45	11.4	7.75	12.2	7.17	21.6	3.63	35.2	1.83	35.6	1.78	35.6	1.78	64.4	1.3	1.766	166,700			
	F. F. Wraps .021																										
8-1-29	Corr. Lined .016	41.7	213.5	111.1	3.8	0	370.1	5.80	11.4	7.78	12.3	7.13	21.0	3.78	32.9	2.04	33.5	1.98	33.5	1.98	66.5	0.4	1.980	182,000			
8-2-29	Corr. Lined .016	47.4	224.3	109.1	3.9	0	384.7	6.37	10.7	8.34	11.7	7.56	20.7	3.84	33.0	2.03	33.6	1.97	33.6	1.97	66.4	0.2	1.973	171,700			
	Corr. Lined .016																										
	Corr. Lined .030																										
8-3-29	Tube Paper .025	48.3	229.9	107.0	4.0	0	389.2	5.61	11.6	7.63	12.6	6.93	21.7	3.61	32.7	2.06	33.3	2.00	33.3	2.00	66.7	0.2	1.998	199,800			
	Week No. 2	42.0	222.7	109.4	4.0	1.1	379.2	5.69	11.3	7.89	12.2	7.23	21.1	3.73	33.2	2.01	33.9	1.95	34.1	1.93	65.9	1.1	1.920	173,600			
	Amer. Screw .025																										
9-9-29	Corr. Lined .030-135	...	....	....	..	..	....	...	...	...	...	...	...	...	...	..	...	...	...	...	...	..	....	.....			
	Corr. Lined .030-135																										
	Shoe Box .020																										
9-10-29	Shoe Lid .024	30.3	215.7	79.6	5.8	4.5	335.9	4.87	12.8	6.84	13.5	6.39	23.8	3.20	33.2	2.02	34.2	1.93	35.0	1.86	65.0	1.0	1.847	179,500	35 ,000	3.64	1.97
	Shoe Lid .024																										
	Corr. Lined .030-135																										
9-11-29	Brown L. Chip .016	26.7	210.2	75.5	5.7	5.7	323.8	4.84	12.9	6.75	13.6	6.35	23.8	3.21	32.5	2.08	33.5	1.99	34.5	1.90	65.5	1.6	1.882	182,000	369,000	3.82	2.03
	Brown L. Chip .016																										
	Chip Board .016																										
9-12-29	Shoe Box .016	65.4	232.5	82.9	4.0	9.0	393.8	6.04	11.1	8.00	12.5	7.00	22.6	3.44	31.6	2.17	32.2	2.11	33.7	1.97	66.3	0.3	1.962	184,500	363,000	3.86	1.97
	Shoe Box .016																										
9-13-29	Corr. Lined .016-100	48.4	224.7	76.0	2.3	7.7	359.1	5.41	11.3	7.82	12.5	7.00	24.0	3.17	34.7	1.88	35.3	1.84	36.9	1.71	63.1	0.1	1.708	137,800	306,000	3.80	2.22
	Corr. Lined .016-100																										
9-14-29	F. F. Wraps .021	45.8	207.5	63.9	1.8	5.7	324.7	4.54	13.4	6.47	14.7	5.83	25.4	2.93	33.0	2.04	33.2	2.02	34.0	1.94	66.0	0.8	1.933	199,000	378,000	3.67	1.90
	Week No. 3	43.3	218.1	75.6	3.9	6.5	347.4	5.14	12.2	7.19	13.3	6.53	23.9	2.19	33.0	2.03	33.7	1.97	34.8	1.87	66.2	0.8	1.866	176,600	354,000	3.83	2.00
	Grand Average	40.3	210.5	88.0	4.6	3.5	353.1	5.35	12.4	7.18	13.4	6.53	23.3	3.31	33.8	1.96	34.7	1.89	35.4	1.83	64.63	1.13	1.822	169,100			

showed only a 4.5 degrees temperature difference in the two tests. This is the point where the greatest value from the temperature increase should be obtained. In order to get the desired results press water temperature difference should be as high as possible. It would seem that the use of predriers between the second and third presses would give the desired results. We understand that predriers have been tried out by other mills. In one instance it was found that they did not give the expected results and they have since been taken out. This would indicate that temperature is closely tied up with felt qualities and that the felts are one of the greatest controlling factors in water removal.

Increased pressure at the presses is closely tied up with felt qualities and type of stock. The first press on Mill No. 1 machine is considerably heavier weighted than the first press on Mill No. 2 machine, yet the moisture content of two sheets going to driers is practically the same. It is customary to weight the presses as heavily as possible and still not get crushing or filling up of felt. The filling up of the felt by dirt, short fibers, etc., is one of the big factors limiting increased pressures on board machines.

Recommendations

We believe that the data available at present indicate that the felts are one of the greatest controlling factors in water removal. The openness of all felts has a decided influence on the moisture content of the board as it goes to the driers. We also believe that a further study of increasing the efficiency of the vats relative to water removal should be made. This would probably consist of studying the effect of weighting the couches, varying the suction and determining which is the most satisfactory mesh of outer cylinder wire to use.

* It should be remembered, however, that while the difference in percentage is not very great, yet the difference in pounds of water per second of board is considerable, as the following table will show.

Table showing pounds of water per pound of paper with varying sheet moisture

Per cent moisture in sheet	Pounds of water per pound of paper
70	2.33
69	2.23
68	2.13
67	2.03
66	1.94
65	1.86
64	1.78
63	1.71
62	1.63
61	1.56
60	1.50
59	1.44
58	1.38
57	1.32
56	1.27
55	1.22
54	1.17
53	1.12
52	1.08
51	1.04
50	1.00

TAPPI Notes

K. S. Maclachlan, managing director of the Alliance Paper Mills, Ltd., Merritton, Ont., has been made vice president and general manager of Fraser Companies, Ltd., Edmundston, N. B.

J. E. Blosser, formerly superintendent of the Scott Paper Company, Chester, Pa., has joined the International Paper Company organization in New York.

A. G. Natwick who was general superintendent of the Lincoln Pulp and Paper Mills at Merritton, Ont., has joined the Crown Willamette Paper Company staff as technical director for the Camas, Wash., mill.

Chester Landes has been transferred from the Kingsport, Tenn., mill of the Mead Fibre Company to the technical service division of the Mead Pulp and Paper Company at Chillicothe, Ohio.

Jacob Dahl has left the Forest Products Laboratory at Madison and will return to Oslo, Norway.

Granville C. Chase is now with the Chemical Paper Manufacturing Company in Holyoke, having until recently been with the Fraser Companies at Madawaska, Maine.

TAPPI Contributing Members

As provided in the recent changes in the Articles of Organization of the Technical Association of the Pulp and Paper Industry, the following companies have become contributing members.

Beloit Iron Works of Beloit, Wis., manufacturers of paper machines. G. A. Macklem has been designated as company representative in TAPPI.

John W. Bolton & Sons, Lawrence, Mass., together with its subsidiary, the Emerson Manufacturing Company of Lawrence, Mass., manufacturers of knives and jordans. W. W. Bolton will be the representative.

Downingtown Manufacturing Company of Downingtown, Pa., manufacturers of paper machines. Jacob Edge has been appointed representative.

Edgar Brothers Company, 50 Church street, New York, N. Y., producers of coating and loading clays. J. Gilber Mason, Jr., is the representative.

English China Clays Sales Corporation, 551 Fifth avenue, New York, N. Y., distributors of imported English clays. S. Goldman is the company representative.

Fitchburg Duck Mills, Fitchburg, Mass., manufacturers of papermakers' cotton drier felts. Thomas C. Sheldon is the Technical Association representative.

Farnsworth Company, Conshohocken, Pa., manufacturers of paper drying systems, oil and steam separators and heat reclaiming systems. F. C. Farnsworth will represent his company in TAPPI.

M. Gottesman & Co., Central National Bank Building, Broadway at 40th street, New York, N. Y., distributors of wood pulp, salt cake and heavy chemicals. A. J. Sigel is company representative.

F. C. Huyck & Sons, Albany, N. Y., manufacturers of Kenwood papermakers' felts. The company will be represented by Dr. E. A. Rees.

Huron Milling Company of New York, Chicago and Boston, manufacturers of starches, cereal glues, gums and pastes. W. A. Nivling of 73 Tremont street, Boston, will be representative.

William A. Hardy & Co., Fitchburg, Mass., manufacturers of screen plates, is represented by C. S. Hardy.

All of these companies have long been closely identified with the pulp and paper industry and have men in their organization who are recognized as authorities in their specialties. It is expected that this closer affiliation with the Technical Association will enable them to be of even greater service to the industry at large.

Industrial Resources of Maine

A 318 page mimeograph report has been issued by the New England Public Service Company of Augusta, Me., showing the results of a survey made by the Lockwood Green Engineers, Inc., of the industrial resources of the part of Maine served by the companies affiliated with the New England Public Service Company.

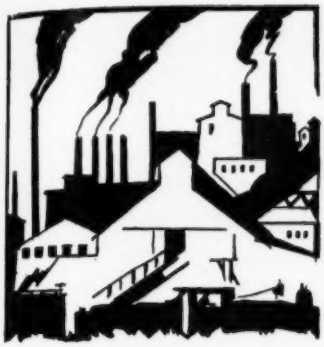
Among the subjects treated are labor and labor regulations, natural resources, power, transportation facilities, industrial development and opportunities. It is interesting to note that when based on both value of products and value added by manufacture, the pulp and paper industry has become the most important industry in Maine.

Copies of this report may be obtained on request by members of TAPPI or other individuals or companies, from the New England Public Service Company, Augusta, Me.

R. A. Hayward Speaks on Manufacture of Paper

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., March 24, 1930.—R. A. Hayward, general manager of the Kalamazoo Vegetable Parchment Company, Kalamazoo, Mich., was the principal speaker at a meeting of the St. Joseph Valley section of the American Chemical Society recently in Washington Hall, Notre Dame, Ind. He gave an interesting talk on "The Manufacture of Paper." The lecture was illustrated by motion pictures.



SECTION OF THE
COST ASSOCIATION OF THE PAPER INDUSTRY
Affiliated with
THE AMERICAN PAPER AND PULP ASSOCIATION
Edited by Thos. J. Burke C.A. Sec.-Treas.

Cost System of a Paper Company *

By A. Lanthier[1]

I feel honored to be called upon to speak this evening before members and guests, and I will do my best, in my own small way, to explain the cost system at present used in our company, and give my modest contribution to our Society.

It is anticipated that actual experience in the working of the system will enable improvements and modifications to be made from time to time, and it is not intended that the actual form, or manner of working this cost should be considered as final.

Before going further with the cost system itself, allow me, gentlemen, to give you a brief idea of processes used in the making of paper. The raw materials are divided in five principal parts, namely, rags, pulp, paper shavings, chemicals and colors. These are charged in the beaters in such proportion and grade as to give the desired quality. From the beaters, the stock is delivered by means of pumps, to the paper machine in a continuous operation, until it has been turned into a dry sheet of paper.

Previous to this, we must observe, however, that some raw materials are not used in the beaters, in the same form in which they are bought. In certain cases it will be necessary to prepare them. For example, the rags have to be dusted, sorted, cut in pieces, boiled, washed, bleached and then stored in drainers for at least three weeks before they can be used in the beater; the same applies to paper shavings, which have to be stored and reduced to a wet stock before they can be used.

Many of the chemicals need also to be prepared for use in the liquid form.

In this mill, each paper machine has its own set of beaters, the capacity of each being 1,000 lbs. of paper dry.

The function of the paper machine is to take the wet stock supplied by the beaters and transform it into dry sheet. At the end of the paper machine, the paper is wound into large rolls, and at this point, we may say that for our purpose, the manufacturing operation has been completed.

The intermediate department takes in a series of mechanical operations previous to entering the paper in the finishing department, namely: loft drying, air drying, rewinding, calendering, hydraulic pressing, cutting, and up until and including the point where it has been delivered to the sorting girls. After the foregoing operations, we consider the paper as entering the finishing department.

In this department, the paper is sorted, counted in reams, and trimmed. This last operation is considered as the end of the finishing.

Packing—the paper is wrapped in reams, labels are fixed to the reams and stamped, reams are placed in cases which are delivered to the stock room or to the cars for shipment as the case may be.

Now, gentlemen, allow me to explain briefly our cost system.

Relation of Cost Records to General Accounts

The cost records are kept at the mills and consist of material, labor and production reports, and summaries. The factory overhead is applied on a machine hour basis, after having been divided as between the various machines.

Inventories at the mills, consisting of finished stock, work in process, raw materials and supplies are kept in the mill books. The inventory of manufactured stock at Montreal is kept in the head office general ledger.

The various raw materials inventory accounts are debited monthly with the cost of purchase obtained from the analysis of purchases invoices, together with the freight and duty thereon, handling and unloading charges. Monthly credits are made to these accounts to cover cost of materials used, obtained from a monthly summary of the mill requisitions.

Exception is made for Raw Rag Inventory Account and Chemicals Account.

The Raw Rag Inventory Account is debited monthly with the cost of purchase, together with freight, duty, handling and unloading charges. Monthly credits are made to this account to cover the cost of raw rags transferred to the rag department for sorting and cleaning.

The Rag Department Inventory Account is debited monthly with the transfer from the Raw Rag Inventory Account, together with wages and chemicals used in this department, and it is credited with the cost of prepared rags transferred to the drainers.

Half Stock Inventory Account is debited monthly with the transfer from Rag Department Inventory Account and is credited with the materials transferred from the drainers to the beaters. The weights are obtained from the beater reports which take care of the estimated loss through shrinkage.

Chemicals Inventory Account is debited monthly with the cost of purchases together with freight, duty, handling and unloading charges thereon. Monthly credits are made to this account to cover the cost of chemicals transferred to the tanks for preparation.

Chemicals in Tanks Inventory Account is debited monthly with the cost of chemicals transferred from the Chemicals Inventory Account, together with preparation wages and is credited with prepared chemicals transferred from the tanks to the beaters. The weights are obtained from the beater cards.

Work in Process Inventory Account is debited monthly with the cost of raw materials, factory expenses and materials, and wages absorbed, and is credited with the cost of finished paper and paper shavings produced.

Finished Paper Inventory Account is charged monthly with the cost of paper manufactured, referred to above. The account is

* From "Cost and Management."
[1] Rolland Paper Co., Ltd., St. Jerome, Que.

credited with the cost of paper sold to customers, and that shipped to our Montreal warehouse, which cost is debited to Mill Control Account.

After the above entries have been made at the end of each month, the balances in the raw materials, factory general expenses and materials, work in process and finished paper accounts will represent respectively, the inventory of these items. A comparison can be made with the actual stocks on hand by taking a physical inventory at the close of any month desirable.

Besides the above mentioned accounts in the Mill Operating Ledger, we have the different wages accounts, a few adjustment accounts, an inter-mill Control Account and a Head Office Control Account. The intermill accounts should reconcile in the ledgers of the Mont-Rolland and St. Jerome Mills, and the Control Account reconciles with the Mills Control Account on the Montreal books.

The Head Office Control Account is credited monthly with the amount of purchases, wages paid, factory expenses and materials, and debited with cost value of paper shipped.

General Statements

For the preparation of the monthly Balance Sheet and Profit and Loss statement, each mill sends to the head office a trial balance of the different accounts of the Mill Operating Ledger, and a report, giving the stock cost, conversion cost, finishing and packing cost of the month's production.

I shall not explain here the Balance Sheet nor the Profit and Loss Account, as these are prepared by the head office.

The records of sales and cost of marketing are kept by our Montreal Office. Consequently the number of pounds of each grade of paper sold are sent to both mills at the end of each month, and these quantities are multiplied by cost price of each grade per hundred pounds so as to find the cost of sales, and this enables each mill to find the book inventory of finished paper.

Deductions for freight on paper, allowances or returned goods as well as Marketing Cost consisting of commissions, selling expenses, loading, demurrage, etc., are not added to the cost of the finished product, but are deducted by the head office from the sales calculated at selling price. This gives the Net Receipts.

Details of Cost System

Now let us go in the details of the Cost System.

A manufacturing program is prepared at the end of each week for the machine tenders' and beaterman's guidance for the following week. This program shows the quantities of each grade of paper to be made during the week. It is prepared by the cost accountant in conjunction with the mill superintendent after taking into consideration the stock of paper and the unfilled orders on hand. When this schedule has been prepared and it is decided on which grade of paper work will be commenced, the mill superintendent prepares the required formula, and, beater cards are written from this formula by the head beaterman, showing the raw materials to be used in each beater. The process of making this particular grade of paper now commences, and materials placed in the beaters are charged at actual cost price. It might be well to mention at this point that certain materials cannot be used in the same form as received, it is therefore necessary to prepare this class of material so as it may be used in the process, adding to the initial cost, the cost of preparation, and the head beaterman and machine tender submit their respective reports daily. The machine tender's report gives the following details:

1—The quality and quantity of paper made at the end of the machine.

2—Numbers of lots.

3—Number of machine hours spent on each lot.

4—Number of machine hours lost.

Lot numbers will be given to each size of paper made by the machine tender when the paper comes through at the end of the machine, and all the various sizes of the same grade of paper made, are considered as one run and are grouped together with a view of obtaining a unit cost for the entire group.

A new run commences when work is started on a different quality of paper.

When a lot number is given to a roll of paper the machine tender starts a route sheet which remains with the lot through each department until the paper is packed and ready for shipment. This form is then sent to the mill cost accountant showing that the lot is finally finished, and when he has received all the route sheets of the many lots which constitute a run, his cost records for that run may be completed.

All materials, wages and expenses entering into the cost of paper made, are charged whenever possible directly to the run on which they are used.

Overhead charges and wages not directly applicable to any lot are the most difficult of all expenses to distribute accurately in a high grade paper mill.

After a careful study of the whole matter, in conjunction with our president and our auditor, we consider that the fairest and most practical method of distribution, is to allot these expenses to the various machines in proportion to their importance, their width, their age and also the auxiliary machines working in conjunction with each, and to absorb them in the different runs on a machine hour basis.

Recording Costs in Cost Record Recapitulation Book

In an industry like ours, it is desirable that the cost system should be as simple and elastic as possible, endeavoring at all times to obtain reliable results. In view to obtaining this result, we have designed a book which shows a complete detailed analysis of the materials used, wages and overhead absorbed in each run of paper. The general headings of this record are four in number, namely,

1—Raw Materials,

2—Mill Supplies and Expenses

3—Manufacturing Wages

4—Finishing Wages

The total amounts absorbed by each run under these four general headings give the total cost of each run. From this total we deduct the value of the paper shavings which are returnable to the beaters at a fixed price. The balance is the total cost of each run.

The first thing to record in this book is the machine tenders' report, grouping under the same run number the different lots made of the same grade. We record the date, the number of the run, quality and quantity of the paper, the lot numbers, number of machine hours spent on each run. Then start the records of cost. The different raw materials loaded in the beater are charged at prepared cost, the quantities are obtained from the beater cards being made for each beater.

The prices are obtained from different sources as follows: For raw materials which are taken from stores and loaded directly into the beaters without any previous preparation, we find the unit cost for each purchase in each grade of material. This method obliges us to keep a store ledger for raw materials. On the debit side we record quantity, actual cost value (including freight, duty and unloading charges) and the unit cost of each purchase; on the credit side we record the consumption in pounds, and when the quantity of the purchase has been all used, we start using the next purchase material in the same manner. This is rather easy to follow, as the majority of our raw materials are bought under contracts for one year and consequently prices are the same for that period.

Raw materials which have to be prepared before loading them in the beaters, cost prices are found in a different manner. Allow me, gentlemen, as an illustration to explain the manner employed to find the cost of rags (half stock) in the drainers.

Raw rags are transferred to the rag department at cost of rags (including freight and unloading) by quantities of 7,500 lbs., which is approximately the capacity of our rag boilers.

To this cost is added the cost of sorting, and chemicals used in boiling and bleaching a boiler of rags.

The rags are then transferred to the drainers. I may point out, that during the process of preparation, there is a loss through shrinkage, and this loss is one of the difficult problems we have in a paper mill to handle. We find the shrinkage by tests made on each grade of rags, and use these results on the subsequent rags that are prepared. These rags are loaded in the beater in a more or less wet form, so tests are taken from time to time so as to find the exact dry weight of a box. Each rag boiler transferred is recorded in a book called the Rag Boiler Record. We find from this book the number of boxes of a given weight, and the price per 100 lbs. of the half stock. Each time a box of half stock is loaded in a beater, the number of the drainer is marked on the beater card, and deductions as to quantity are made in the Rag Boiler Record Book, and in so doing, we know when a drainer of rags is all used.

When the different materials have been recorded in their respective column, they are totalled in a separate column.

The second step is the Record of Mill Supplies and Expenses. This heading is sub-divided as follows:—Repair and Maintenance Material, which includes also all kind of expenses made during the month, Fuel, Electric Power Purchased, Wires and Felts for the paper machine, Packing and Shipping Materials.

All these supplies and expenses are alloted to the various runs calculated on a machine hour rate after they have been allocated to the various machines.

The total expenses to be absorbed during the month by each machine are divided by the number of hours in the current month to obtain a unit cost per machine hour. This rate is used for distributing these expenses over the various runs.

The amount of mill overhead applicable to each run is then obtained by multiplying the number of machine hours on any particular run by the unit cost per machine hour for the month.

That portion of the overhead which remains unabsorbed at the end of the month due to the machines not being in continuous operation for the whole month is carried forward and added to the proportion of overhead to be taken care of in the subsequent month's runs.

If the machine, however, should cease operations for an extended period to effect repairs or for other reasons, it might be necessary to spread the unabsorbed portion over a longer period than one month.

I must explain, however, that we absorb in the actual month's runs, the value of the different supplies and expenses that have really been used the preceding month, according to stock book. This has been made necessary, on account of the importance there is to give the management a report on the cost of each run immediately after completion.

This heading has been subdivided as follows: Manufacturing Wages, Boiler House Wages, Repairs and Maintenance Wages, Office and Superintendance Wages. These are considered as indirect wages and it would be difficult to allocate them actually on the present runs. It is necessary to use the preceding month's wages and distribute them on the actual month's runs on a machine hour basis.

Furthermore, to arrive at exact figures for different wages, we have planned a Wages Distribution Book, in which we record the total wages of each day under the different necessary headings.

This book is balanced every two weeks with the payroll book.

In order to obtain this result, we have planned forms on which the foreman of each department gives a daily report of the wages paid by his department.

These forms although different, are all of the same basic principle. The cost accountant gives each foreman a list of his regular staff of employees, their hourly wages and the total amount of wages for a regular day's work. On this form he records the wages for the day. Space is reserved for extra and missing employees.

He adds to the amount the extras, and deducts wages of missing employees. This gives the exact amount of wages paid in his department.

These forms are sent to the office every morning and they are recorded under their proper heading in the Wages Distribution Book. From this book we have the amounts of wages to be allocated on each run for the next month.

It may be believed that this method of obtaining from the foreman the amount of wages paid every day in each department is giving trouble and is complicated, but our own experience shows that such is not the case.

Now, we are at the last part of the system—The Finishing Room—It may be necessary to split the cost on a run before the paper finally arrives at the finishing room, because occasionally a run of paper is divided after coming off the end of the machine, a part being loft dried and a part being festoon or air dried, and it is very essential to know the difference in cost of both processes, or, else, when at the end of the month, runs are partly finished and partly unfinished, lots finished are recorded separately from those unfinished. This enables us to obtain accurate figures for the two inventory accounts: Paper Finished, and Paper in Process. Special columns have been reserved in the Cost Recording Book for the splitting of runs, when necessary. Our method is to split the charges accumulated to the run up to this point, in proportion to the quantity made in pounds on the paper machine in each group of lots, finally we add the Finishing Wages which are direct wages.

The Finishing Wages have been subdivided into three parts, namely: Intermediate Wages, Finishing Wages, and Packing Wages.

Intermediate Wages are wages paid for operations completed in the Intermediate Department previously explained. These are allocated to the different lots according to the number of hours spent on each.

Sorting in the finishing department is entirely on a piece work basis and can be charged directly to the proper lot. Other wages paid in this department on a hourly basis are distributed over the various lots in proportion to the number of hours spent by the sorting girls on each lot.

Packing Department Wages are paid on an hourly basis and are distributed over each lot in proportion to the number of hours spent by the sorting girls on each. The reason why we allocate these wages to each lot on the sorting girls' hour basis, is because these employees are packing the paper produced by the sorting girls. If the paper is clean, the sorting girls will produce more, and on the other hand, if dirty, they will produce less. Consequently the same staff of packers will pack more or less paper for the same amount of wages paid. This method will show a lower cost per 100 lbs. for packing paper which has come clean to the sorting tables and a higher cost for paper which has been delivered defective in the hands of the sorting girls.

When we have recorded all this in the Cost Book, the total of the item gives the total cost of the run.

From this total we deduct the value of paper shavings produced by each run, at a conventional price, and the result is the net cost of the run; this divided by the finished weight gives cost price per 100 lbs.

A special column called Work in Process has been reserved in this Cost Record Book, in which we record the cost value of the unfinished runs or portion of runs, at the end of each month.

This column should balance with Work in Process Inventory Account, in the Operating Ledger.

In the above mentioned book finished runs are written under their proper quality heading as follows: Date, run number, quantity in pounds finished and net cost value. At the end of the month we take the average price per 100 lbs. and this price is used in calculating the Cost of Sales, in order to obtain a book inventory of the Finished Paper.

COST SECTION

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 22, 1930

SUMMARY

Cigarette paper	532 cs.
Wall paper	51 bls., 13 cs.
Paper hangings	7 pkgs., 28 bdls., 3 bls., 55 cs.
Painted paper	7 bls.
News print	1,847 rolls
Printing paper	176 cs.
Packing paper	4 cs.
Filter paper	20 bls., 65 cs.
Drawing paper	7 cs.
Colored paper	27 cs.
Decalcomania paper	32 cs.
Metal coated paper	72 cs.
Baryta coated paper	54 cs.
Basic paper	25 cs.
Coated paper	19 cs.
Surface coated paper	1 ble., 75 cs.
Litho paper	50 cs.
Caoutchouc paper	8 cs.
Note paper	1 cs.
Gummed paper	4 cs.
Tissue paper	7 cs.
Writing paper	20 cs.
Trunk paper	3 cs.
Envelopes	15 cs.
Cable paper	4 cs.
Miscellaneous paper	707 rolls, 278 bls., 298 cs.

CIGARETTE PAPER

Standard Products Corp., Rochambeau, Havre, 72 cs.
De Manduit Paper Corp., Schodack, Havre, 345 cs.
P. J. Schweitzer, Pr. Adams, Marseilles, 115 cs.

WALL PAPER

A. C. Dodman, Jr., Inc., Aquitania, Southampton, 8 bls.
S. H. Pomerance Co., Aquitania, Southampton, 1 cs.
F. J. Emmerich, Albertic, Liverpool, 22 bls.
Irving Trust Co., Westphalia, Hamburg, 12 cs.
F. J. Emmerich, Westphalia, Hamburg, 16 bls.
Globe Shipping Co., Westphalia, Hamburg, 5 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., American Shipper, London, 54 cs., 2 bls., 28 bdls., 7 pkgs.
Whiting & Patterson Co., Inc., Aquitania, Southampton, 1 cs., 1 ble.

PAINTED PAPER

W. H. S. Lloyd & Co., Rochambeau, Havre, 7 bls.

NEWS PRINT

Parsons & Whittemore, Inc., Stuttgart, Bremen, 696 rolls.
Parsons & Whittemore, Inc., Chickasaw, Kotka, 674 rolls.
Scripps Howard Supply Co., Drottningholm, Gothenburg, 250 rolls.
The Times Co., Drottningholm, Gothenburg, 61 rolls.
Perkins Goodwin Co., Westphalia, Hamburg, 166 rolls.

PRINTING PAPER

Rectigraph Co., Schodack, Havre, 75 cs.
Oxford University Press, Lancastria, Liverpool, 9 cs.
Japan Paper Co., Stuttgart, Bremen, 8 cs.
F. C. Strype, Stuttgart, Bremen, 32 cs.
Dingelstedt & Co., Stuttgart, Bremen, 8 cs.
D. F. Young, Stuttgart, Bremen, 5 cs.
Steffens Jones Co., Stuttgart, Bremen, 9 cs.
Winsor Newton Co., American Shipper, London, 2 cs.
M. Capens, Westphalia, Hamburg, 1 cs.
Acme Letterfile Co., Giulia, Trieste, 24 cs.
Tamm & Co., Giulia, Trieste, 3 cs.

PACKING PAPER

M. Capens, Westphalia, Hamburg, 4 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Aquitania, Southampton, 31 cs.
H. Reeve Angel & Co., Inc., Port Campbell, London, 16 cs.
C. Schleicher Schull Co., Westphalia, Hamburg, 18 cs.
A. Giese & Son, Liverpool Maru, Hamburg, 20 bls. (mass).

DRAWING PAPER

G. W. Sheldon & Co., American Shipper, London, 2 cs.
H. Reeve Angel & Co., Inc., Port Campbell, London, 5 cs.

COLORED PAPER

S. Gilbert, Stuttgart, Bremen, 13 cs.
J. Wanamaker, Stuttgart, Bremen, 11 cs.
F. L. Kramer & Co., Stuttgart, Bremen, 3 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Lancastria, Liverpool, 20 cs.
C. W. Sellers, Stuttgart, Bremen, 12 cs.

METAL COATED PAPER

K. Pauli Corp., Stuttgart, Bremen, 72 cs.

BARYTA COATED PAPER

Globe Shipping Co., Stuttgart, Bremen, 22 cs.
J. H. Schroeder Banking Corp., Stuttgart, Bremen, 32 cs.

BASIC PAPER

Globe Shipping Co., Stuttgart, Bremen, 25 cs.

COATED PAPER

P. C. Zuhlke, H. Jaspar, Antwerp, 5 cs.
Gevaert Co. of America, H. Jaspar, Antwerp, 2 cs.
Pacific National Bank, Westphalia, Hamburg, 13 cs.

SURFACE COATED PAPER

Gevaert Co. of America, H. Jasper, Antwerp, 75 cs.
Phoenix Shipping Co., Westphalia, Hamburg, 1 ble.

LITHO PAPER

A. W. Putnam, Royal Prince, Hong Kong, 50 cs.

CAOUTCHOUC PAPER

Globe Shipping Co., Westphalia, Hamburg, 8 cs.

NOTE PAPER

H. Reeve Angel & Co., Inc., Port Campbell, London, 1 cs.

GUMMED PAPER

Happel & McAvoy, Westphalia, Hamburg, 4 cs.

TISSUE PAPER

G. W. Sheldon & Co., American Shipper, London, 3 cs.
W. J. Byrnes, Aquitania, Southampton, 4 cs.

WRITING PAPER

Japan Paper Co., Stuttgart, Bremen, 16 cs.
Globe Shipping Co., Pr. Adams, Genoa, 4 cs.

TRUNK PAPER

P. H. Petry & Co., Westphalia, Hamburg, 3 cs.

ENVELOPES

J. Beckhard, Stuttgart, Bremen, 15 cs.

CABLE PAPER

Standard Underground Cable Co., Stuttgart, Bremen, 4 cs.

MISCELLANEOUS PAPER

Standard Products Corp., Rochambeau, Havre, 166 cs.
F. L. Kramer & Co., Rochambeau, Havre, 15 cs.
Keller Dorian Paper Co., Rochambeau, Havre, 19 cs.
C. H. Boulin, Rochambeau, Havre, 10 cs.
Hensel Bruckman & Lorbacher, Stuttgart, Bremen, 2 cs.
The Borregaard Co., Drottningholm, Gothenburg, 707 rolls, 52 bls.
Kramer & Co., Drottningholm, Gothenburg, 226 bls.
Japan Paper Co., Alesia, Marseilles, 6 cs.

RAGS, BAGGINGS, ETC.

E. Butterworth & Co., Inc., Kerhonkson, Dublin, 77 bls. rags.
V. Galaup, Schodack, Dunkirk, 18 bls. rags.
V. Galaup, Schodack, Havre, 215 bls. rags.
International Purchasing Co., Schodack, Havre, 52 bls. bagging.
C. R. Spence, Hoxie, Dublin, 54 bls. rags.
——, California, Glasgow, 376 bls. rags.
N. Y. Trust Co., California, Glasgow, 78 bls. rags.
Brown Bros. & Co., California, Glasgow, 65 bls. rags.
C. R. Spence, California, Glasgow, 51 bls. rags.
Robert Blank, California, Glasgow, 72 bls. rags.
E. Mayer, Drottningholm, Gothenburg, 16 bls. rags.
S. Birkenstein & Son, Coldbrook, B. Ayres, 100 bls. jute cuttings; 142 bls. rags.
Brown Bros. & Co., Exilona, Bari, 43 bls. rags.
Fidelity Trust Co., Exilona, Bari, 8 bls. rags.
Banco Com'l Trust Co., Evilona, Genoa, 249 bls. bagging.
Brown Bros. & Co., Francisco, Hull, 98 bls. rags.
W. Steck & Co., Francisco, Antwerp, 118 bls. jute card waste.
Castle & Overton, Inc., Francisco, Antwerp, 279 bls. flax waste.
——, Francisco, Antwerp, 160 bls. flax waste.
G. W. Millar & Co., Francisco, Antwerp, 94 bls. flax waste.
Harzog Co., Francisco, Antwerp, 18 bls. bagging.
Interstate Trust Co., Francisco, Antwerp, 286 bls. bagging.
Royal Manfg. Co., Francisco, 37 bls. thread waste.
D. M. Hicks, Inc., Francisco, Antwerp, 40 bls. thread waste.
——, Friesland, Hamburg, 210 bls. rags.

OLD ROPE

Brown Bros. & Co., California, Glasgow, 31 coils.
International Purchasing Co., Examiner, Genoa, 208 coils.
International Purchasing Co., Exilona, Genoa, 238 coils.
Brown Bros. & Co., Francisco, Newcastle, 108 coils.
Brown Bros. & Co., Francisco, Hull, 34 coils.
W. Steck & Co., Francisco, Hull, 45 coils.
Brown Bros. & Co., Magallanes, Vigo, 68 coils.

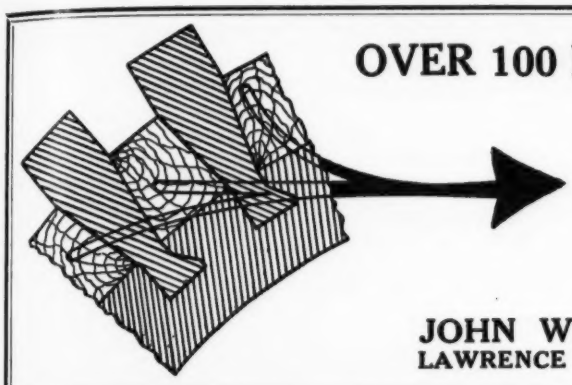
CASEIN

Equitable Trust Co., Schodack, Havre, 266 bags, 19,979 kilos.
Kalbfleisch Corp., Voltaire, B. Ayres, 67 bags.
P. M. Duche & Son, Voltaire, B. Ayres, 417 bags.
National City Bank, Voltaire, B. Ayres, 561 bags.
A. Hurst & Co., Voltaire, B. Ayres, 467 bags.
National City Bank, Boswell, B. Ayres, 1,809 bags.
A. Hurst & Co., Eastern Prince, B. Ayres, 361 bags.
Crawford Keen Co., Eastern Prince, B. Ayres, 1,000 bags.

WOOD PULP

Atterbury Bros., Inc., Fred. VIII, Oslo, 250 bls. wood pulp, 50 tons.
Perkins Goodwin & Co., Drottningholm, Gothenburg, 51 bls. kraft pulp.
E. M. Sergeant & Co., Drottningholm, Gothenburg, 598 bls. dry soda pulp.
Johanson Wales & Sparre, Inc., Drottningholm, Gothenburg, 155 bls. wood pulp.
Lagerloef Trading Co., Bord City, Rauma, 1,330 bls. sulphite, 224 tons.
Castle & Overton, Inc., Westphalia, Hamburg, 1,821 bls. wood pulp, 272 tons.
——, Westphalia, Hamburg, 260 bls. wood pulp, 52 tons.
J. Andersen & Co., Liverpool Maru, Hamburg, 965 bls. sulphite, 191 tons.
Price & Pierce, Ltd., Chickasaw, Stockholm, 1,175 bls. wood pulp, 238 tons.
——, Chickasaw, Kotka, 765 bls. sulphate, 130 tons.
——, Chickasaw, Kotka, 778 bls. sulphite, 130 tons.
——, Chickasaw, Kotka, 601 bls. sulphate, 99 tons.

(*Continued on page 70*)



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Equipped with Bronze or Steel Knives. One plug takes any size knife—3/16" to 7/8" cut.

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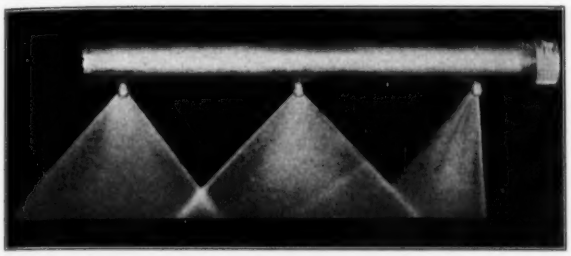

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Have you figured out how much rosin doesn't go into your paper? One mill found that it was worth $2300 a year. For greater retention of rosin in the sheet they use Quartz Quality Silicate in the beater and now save $1400 annually. Details of the experience of this mill are available to you in the form of a certified report of a survey made for us by the A. C. Nielsen Company.

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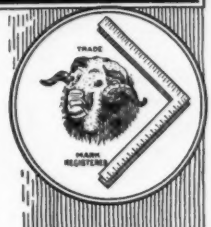


THE WATERBURY FELT CO., SKANEATELES FALLS, N.Y.

Imports of Paper and Paper Stock

(*Continued from page 68*)

Lagerloef Trading Co., Hallaren, Tolkis, 520 bls. sulphite.
Lagerloef Trading Co., Hallaren, Kotka, 160 bls. sulphate; 100 bls. sulphite.
——, Froesland, Hamburg, 260 bls. wood pulp, 52 tons.

WOOD FLOUR

The Burnet Co., Drottningholm, Gothenburg, 424 bags.
Innes Speiden & Co., Drottningholm, Gothenburg, 726 bags.

PORTLAND IMPORTS

WEEK ENDING MARCH 22, 1930

Lagerloef Trading Co., Chickasaw, Helsingfors, 3 bls. wood pulp.
——, Chickasaw, Kotka, 893 bls. sulphate, 152 tons.
——, Chickasaw, Kotka, 4,672 bls. sulphite, 782 tons.
Waterfalls Papermills Co., Chickasaw, Stockholm, 5,500 bls. wood pulp, 1,116 tons.
Lagerloef Trading Co., Hallaren, Tolkis, 2,626 bls. sulphite.
Lagerloef Trading Co., Hallaren, Kotka, 4,250 bls. sulphate; 4,153 bls. sulphite; 51 rolls wood pulp boards.

BALTIMORE IMPORTS

WEEK ENDING MARCH 22, 1930

Lagerloef Trading Co., Bird City, Helsingfors, 1,090 bls. sulphite, 189 tons.
Lagerloef Trading Co., Bird City, Rauma, 4,194 bls. sulphate, 700 tons; 3,459 bls. sulphite, 581 tons.
——, Bird City, Kotka, 488 bls. sulphite, 81 tons.
Pagel Horton & Co., Inc., Bird City, Stockholm, 3,250 bls. sulphite, 584 tons.
M. Gottesman & Co., Inc., Bird City, Stockholm, 2,400 bls. sulphite, 406 tons.
Price & Pierce, Ltd., Bird City, Stockholm, 800 bls. sulphite, 101 tons.
Brown Bros. & Co., Bird City, Stockholm, 2,512 bls. sulphite, 513 tons.
Congoleum Nairn Co., Exilona, Genoa, 610 bls. rags.
Bulkley Dunton & Co., Bilderdyk, ——, 1,200 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING MARCH 22, 1930

1st National Bank of Boston, Boswell, B. Ayres, 417 bags casein.
International Purchasing Co., Examiner, Genoa, 166 coils old rope.
Lagerloef Trading Co., Chickasaw, Helsingfors, 132 bls. sulphite, 26 tons.
——, Chickasaw, Kotka, 1,016 bls. sulphate, 203 tons.
Johanson Wales & Sparre, Inc., Chickasaw, Gothenburg, 10 bls. sulphate, 2 tons.
The Borregaard Co., Inc., Chickasaw, Gothenburg, 1,250 bls. wood pulp, 253 tons.
E. M. Sergeant & Co., Chickasaw, Gothenburg, 250 bls. wood pulp, 42 tons.
Price & Pierce, Ltd., Chickasaw, Gothenburg, 875 bls. wood pulp, 176 tons.
Perkins, Goodwin & Co., Chickasaw, Gothenburg, 1,651 bls. sulphite, 329 tons.
Scandinavian Pulp Agency, Inc., Chickasaw, Gothenburg, 1,397 bls. sulphite, 278 tons.
Perkins Goodwin & Co., Chickasaw, Gothenburg, 127 bls. kraft pulp, 25 tons.
J. Andersen & Co., Chickasaw, Gothenburg, 1,875 bls. sulphite, 380 tons.
Brown Bros. & Co., Chickasaw, Gothenburg, 53 coils old rope.
Beech Nut Packing Co., Chickasaw, Gothenburg, 204 rolls wrapping paper.
Bulkley Dunton & Co., Hallaren, ——, 5,000 bls. wood pulp.
Parsons & Whittemore, Inc., Hallaren, Stockholm, 240 bls. sulphite.
Lagerloef Trading Co., Hallaren, Tolkis, 1,981 bls. sulphate; 4,060 bls. sulphite; 69 bls. wood pulp boards.
Atkinson Haserick Co., Pr. Adams, Genoa, 4 cs. paper.
Bulkley Dunton & Co., West Eldara, ——, 675 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 22, 1930

Katzenstein & Keene, Inc., Schodack, Havre, 225 bls. bagging.
Castle & Overton, Inc., Schodack, Havre, 185 bls. rags.
S. E. Ingber, Schodack, Havre, 43 bls. rags.
D. I. Murphy, Schodack, Havre, 292 bls. rags.
V. Galaup, Schodack, Havre, 38 bls. rags.
A. Hurst & Co., Schodack, Havre, 60 bls. rags.
Darmstadt Scott & Courtney, Schodack, Havre, 21 bls. rags.
Castle & Overton, Inc., Schodack, Dunkirk, 87 bls. rags.
Katzenstein & Keene, Inc., Schodack, Dunkirk, 226 bls. rags; 40 bls. bagging.
G. Mathes & Co., Schodack, Dunkirk, 82 bls. rags.
J. M. Hagy Waste Works, Schodack, Dunkirk, 25 bls. rags.
D. I. Murphy, Schodack, Dunkirk, 65 bls. rags.
——, Exermont, Tunis, 178 bls. rags.
——, Bird City, Kotka, 5,436 bls. sulphite, 1,086 tons.
——, Bird City, Kotka, 90 bls. sulphate, 15 tons.
Parsons & Whittemore, Inc., Bird City, Kotka, 72 rolls news print.
Lagerloef Trading Co., Bird City, Rauma, 339 bls. sulphite, 57 tons.
G. Mathes & Co., Examiner, Genoa, 20 bls. rags.
——, Examiner, Leghorn, 105 bls. rags.
Guaranty Trust Co., Examiner, Leghorn, 134 bls. rags.
Fidelity Trust Co., Exilona, Bari, 68 bls. rags.
Int'l Germanic Trust Co., Exilona, Marseilles, 51 rolls old rope.
Equitable Trust Co., Exilona, Marseilles, 54 bls. rags.

Trade Practice Conference for Envelopes

[FROM OUR REGULAR CORRESPONDENT]

Washington, D. C., March 26, 1930.—The Federal Trade Commission has authorized a trade practice conference for envelope manufacturers. Commissioner C. W. Hunt will preside but neither the time nor place has yet been determined upon. It is reported that between 75 and 85 per cent of the volume of business favors the conference.

Among the subjects to be taken up at the conference will be the inducing breach of contract, dafamation of a competitor or disparagement of his goods, imitation of trade marks or trade names, threats of suit for patent or trade mark infringement, enticement of employees, repudiation of contracts, misbranding, deviation from standards, price discrimination, terms of sales, guaranteed prices, definition of a qualified jobber, limitation of split deliveries and antidumping and similar matters.

Longview Fibre Co. To Add Unit

[FROM OUR REGULAR CORRESPONDENT]

Longview, Wash., March 22, 1930.—The Longview Fibre Company will add another unit to its plant consisting of a modern structure to be used for manufacturing solid fiber and corrugated shipping containers. The new plant will be erected immediately at the mill site.

A single story building will provide about 50,000 square feet of additional space which together with that already available will permit a large output of boxes. It is planned to have operation of the box plant underway by August 1 of this year, employing at first about 50 persons each shift, although it may not run to capacity at first. No new financing has been included in this additional program.

Swedish Wood Pulp Market Quiet

[FROM OUR REGULAR CORRESPONDENT]

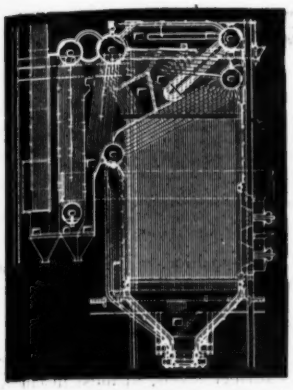
Washington, D. C., March 26, 1930.—The Swedish wood pulp market is extremely quiet according to reports in the hands of the Department of Commerce. Owing to the early placing of orders, however, this dullness has not yet affected prices, the mills being booked far ahead. A couple of thousand tons of strong sulphite were recently disposed of to continental buyers for 1931 delivery. No important sales have recently been made by the ground wood manufacturers, except for 15,000 to 20,000 metric tons sold for 1931 delivery.

In the news print field interest centers in the market in North America, and buyers are evidently holding off awaiting developments there, the report states. The market for other classes of paper produced by the Swedish mills is on the whole weak. This particularly applies to M. G. sulphite and unglazed kraft papers, especially the kraft used in the manufacture of cement bags. Very little business, also, is being transacted in boards. Prices on the whole, remained stable.

Naylor Line Pipe Bulletin

An attractive and interesting bulletin describing the Naylor Line Pipe has just been issued by the Naylor Pipe Company, of Chicago, Ill. The bulletin is profusely illustrated and shows effectively installations of Naylor Line Pipe in various industries.

The Naylor spiral lock seam, electrically welded by the Naylor process, results in a continuous spiral truss which provides a mechanically correct structure, giving maximum structural strength with minimum weight. The structure provides a cushion to absorb loads and take care of normal expansion and contraction in each pipe joint.



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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 26, 1930.

Conditions in the local paper market were irregular during the past week. Demand for the various standard grades of paper was rather spotty. Most of the business transacted was along routine lines. However, sales forces of the leading paper organizations are conducting a strenuous campaign for new business and more lively trading is anticipated in the near future.

There were no radical developments in the news print market. Production was maintained at 72 per cent of weighted capacity in Canada and the United States during the week ended March 8, according to information gathered by the News Print Service Bureau. The output is being freely absorbed by the publishers. Stocks in hand are not excessive.

Trading in the paper board market was moderately active. The price situation continues unsatisfactory. The fine paper market is steady and unchanged with prices generally holding to former levels. Tissues continue to move in seasonal volume. The position of the coarse paper market is practically unchanged while the southern kraft situation is still involved.

Mechanical Pulp

The ground wood market is steady. Demand is fairly persistent and supplies are moving into consumption in normal volume for the time of year. Production here and abroad is being maintained in sufficient volume to take care of current requirements, although there are no undue accumulations. Prices are generally holding to schedule and shading is infrequent.

Chemical Pulp

Business in the chemical pulp market was rather quiet. While quotations on most of the various grades are holding up well, some weakness has developed in the kraft pulp situation. Imported No. 1 kraft pulp is now being offered at from $2.15 to $2.30, and imported No. 2 kraft pulp at from $2.00 to $2.15, on dock, Atlantic ports.

Old Rope and Bagging

Some improvement was noticed in the old rope market. Demand for both domestic and imported old manila rope was better and prices were steady to firm. Mixed strings are moving in satisfactory volume. The bagging market is little changed. Gunny is in fair request but scrap is rather dull at present. Roofing grades are fairly active.

Rags

Paper mill interest in the domestic rag market was fairly satisfactory. Cotton cuttings are exhibiting a moderately strong trend. Mixed rags are slightly easier. New white No. 1 shirt cuttings are now quoted at from $9.25 to $9.75, while new white No. 2 shirt cuttings are selling at from $7.00 to $7.50. There was practically no improvement noticed in the foreign rag market.

Waste Paper

The feature of the paper stock market during the past week was the strong demand for soft white No. 1 shavings. Offerings of this grade are limited and naturally prices are now much firmer. From $2.40 to $2.55 quotations on soft white No. 1 shavings have advanced to from $2.55 to $2.65. The position of other grades of waste paper is practically unchanged.

Twine

Steadiness prevails in the local twine market. Prices of the various grades are holding up to former levels, in most instances, and there is little talk of concessions around at present. With the approach of Easter, it is expected that demand will expand materially, and the outlook for the future is considered encouraging in most quarters.

Finnish Pulp Shipments

The Finnish Cellulose Union reports shipments of chemical pulp during the month of January to be about on a level with the corresponding month of last year when shipments totaled 32,608 metric tons. Exports during the first month of the current year comprised 24,933 tons of sulphite and 4,348 tons of sulphate as against respectively 23,470 tons and 7,080 tons last year. In addition to the shipments by the organization mentioned, 2,058 tons of sulphate pulp in January 1929 and 3,454 tons in January of this year were exported by the Diesen Wood Company. Nearly one-half of this year's shipments during January were taken by Great Britain and the United States, other important purchasers being Russia, France and Belgium in the order named. Eight hundred and forty-three tons of sulphite pulp and 201 tons of sulphate pulp went to South America.

Southeastern Superintendents to Meet

The Southeastern Division of the American Pulp and Paper Mill Superintendents Association will hold its annual Spring meeting at Chattanooga, Tenn., Monday and Tuesday, April 7 and 8. B. K. Steadman, the secretary-treasurer of the Association, Standard Paper Manufacturing Company, Richmond, Va., writes that a big meeting is being planned and that an interesting and valuable program of papers will be presented.

Tuesday will be devoted mostly to pleasure and sightseeing. Chattanooga is quite an industrial city and being situated directly in the Blue Ridge Mountains, presents a very beautiful sight at this time of the year.

Senate Passes Tariff Bill

WASHINGTON, D. C., March 24, 1930.—After nearly ten months of labor, the Senate passed the tariff bill late this afternoon by a vote of 53 to 31. The measure was approved in the upper chamber amid scenes marked by sharp conflict and intense excitement. Washington had been waiting for this moment for months, but many were apprehensive that something might happen to impel the Senate again to postpone action and start another verbal marathon.

F. C. Ladd Goes With Keith Paper Co.

F. C. Ladd, for many years superintendent of the Byron Weston Paper Company, Dalton, Mass., has taken an important position with the Keith Paper Company, Turners Falls, Mass., and will assume his new duties April 1. Mr. Ladd will move his family to Turners Falls as soon as accommodations can be secured.

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 26, 1930.

BLANC FIXE.—There were no radical changes in the blanc fixe market. Demand for the pulp and the powder was seasonal. Prices remain unaltered. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is selling at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—The position of the bleaching powder market is practically unchanged. Contract shipments are going forward at a fairly satisfactory pace. Prices are generally holding to schedule. Bleaching powder is quoted at from $2.00 to $2.35 per 100 pounds, in drums, at works.

CASEIN.—Some improvement was noticed in the casein market. Domestic casein is now quoted at from 14½ cents to 16 cents per pound, while Argentine standard ground is selling at from 14 cents to 14½ cents, and finely ground at from 15 cents to 15½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Supplies of caustic soda are beginning to move into consumption in better volume than of late. Prices are holding to schedule. Solid caustic soda is quoted at from $2.90 to $2.95. The flake and the ground are selling at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market was moderately active. The contract movement was normal. Prices are being maintained at previously quoted levels. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Conditions in the chlorine market are fairly satisfactory. The prevailing demand is rather quiet but more active trading is anticipated in the near future. Prices remain unchanged. Chlorine is quoted at $2.50 per 100 pounds, in tanks or multi-unit cars, in ton lots, or over, at works.

ROSIN.—Business in the rosin market has improved and prices have advanced. The grades of gum rosin used in the paper mills are quoted at from $7.85 to $8.45 per 280 pounds, in barrels, on dock. Wood rosin is selling at from $5.75 to $6.25 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Offerings of salt cake continue scarce and the market is exhibiting a strong undertone. Demand is persistent and contract shipments are heavy. Salt cake is quoted at from $22 to $25 per ton, while chrome salt cake is selling at from $20 to $21 per ton, in bulk, at works.

SODA ASH.—While the soda ash market was rather quiet, there are a number of inquiries around for future needs, and the outlook is encouraging. Prices are generally holding to schedule. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½; and in barrels, $1.55.

STARCH.—Despite the irregularity of the corn market, no further changes in starch quotations have been reported. Shipments of this product are going forward to the paper mills in normal volume. Special paper making starch is quoted at $3.72 in bags, and at $3.99 per 100 pounds, in barrels.

SULPHATE OF ALUMINA.—Steadiness prevails in the sulphate of alumina market. The contract movement is well up to average. Prices are holding to previously quoted levels. Commercial grades are quoted at from $1.40 to $1.55 and iron free at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is practically unchanged. Prices are holding to schedule. Sulphur is quoted at $18 per ton, at mine, for orders of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Trading in the talc market was mostly along routine lines. Contract shipments are moving in seasonal volume. Prices are unchanged. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines, while imported talc is selling at from $18 to $20 per ton, in bags, ship side.

Market Quotations

Paper
(F. o. b. Mill)

Ledgers	11.00	@	38.00
Bonds	9.00	@	53.25
Writings—			
Extra Superfine	14.00	@	32.00
Superfine	14.00	@	32.00
Tub sized	10.00	@	15.00
Engine sized	8.00	@	11.00
Book, Cased—			
S. & S. C.	6.00	@	7.50
M. F.	5.75	@	7.00
Coated and Enamel	7.50	@	12.00
Lithograph	7.50	@	12.00
Tissues—Per Ream—			
White No. 1	.75	@	1.00
Anti-Tarnish	1.35	@	1.90
Colored	1.00	@	2.00
White No. 2	.75	@	.80
Kraft	1.00	@	1.10
Manila	.75	@	.80
Kraft—			
No. 1 Domestic	6.00	@	6.50
No. 2 Domestic	3.87½	@	5.00
Southern	3.75	@	4.50
Imported	6.50	@	7.00
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.75	@	5.25
No. 2 Wood	4.00	@	4.50
Butchers	3.75	@	4.25
Fibre Papers—			
No. 1 Fibre	5.00	@	5.50
No. 2 Fibre	4.75	@	5.25
Common Bogus	2.75	@	3.00
Screenings	3.00	@	3.25
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs.	13.00	@	16.00
Bleached, basis 20 lbs.	15.00	@	16.00

(Delivered New York)

News, per ton—			
Rolls, contract	62.00	@	—
Rolls, spot	62.00	@	—
Sheets	67.00	@	—
Side Runs	47.00	@	52.00
Boards—per ton—			
News	37.50	@	—
Straw	52.50	@	—
Chip	35.00	@	—
Binders' Boards	65.00	@	70.00
Wood Pulp	90.00	@	95.00
65 Test Jute Liner	45.00	@	47.50
85 Test Jute Liner	50.00	@	55.00
Sgl. Mla. Ll. Chip	47.50	@	50.00

Mechanical Pulp
(On Dock)

No. 1 Imported—			
Moist	30.00	@	32.00
Dry	32.00	@	34.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@	32.00
Screenings	15.00	@	20.00

Chemical Pulp
(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	3.25	@	4.25
Easy Bleaching	2.80	@	3.05
No. 1 strong unbleached	2.65	@	2.75
Mitscherlich unbleached	2.70	@	3.00
No. 2 strong unbleached	2.40	@	2.60
No. 1 Kraft	2.15	@	2.30
No. 2 Kraft	2.00	@	2.15
Sulphate—			
Bleached	3.40	@	3.85

(F. o. b. Pulp Mill)

Sulphite (Domestic)—			
Bleached	3.20	@	4.75
Easy Bleaching Sulphite	2.65	@	3.00
News Sulphite	2.50	@	2.70
Mitscherlich	3.00	@	3.25
Kraft (Domestic)	2.10	@	3.30
Soda Bleached	3.10	@	3.25
Sulphate Screenings—			
Coarse	.75	@	.95
Refined	1.65	@	1.85

Domestic Rags
New Rags
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	9.25	@	9.75
New White, No. 2	7.00	@	7.50
Silesias No. 1	7.50	@	8.00
New Unbleached	10.50	@	11.00
New Blue Prints	5.25	@	5.50
New Soft Blacks	5.25	@	5.75
Blue Overall	7.25	@	7.75
Washables	4.75	@	5.25
Fancy	5.50	@	6.00
Mixed Khaki Cuttings	4.75	@	5.25
Pink Corset Cuttings	8.00	@	8.50
O. D. Khaki Cuttings	5.15	@	5.75
Men's Corduroy	3.75	@	4.25
New Mixed Blacks	3.50	@	3.75

Old Rags

White, No. 1—			
Repacked	5.50	@	6.00
Miscellaneous	4.50	@	5.00
White, No. 2—			
Repacked	3.00	@	3.50
Miscellaneous	2.50	@	2.75
St. Soiled, White	2.00	@	2.15
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	2.00
Black Stockings	3.25	@	3.75
Roofing Rags—			
Cloth Strippings	1.70	@	1.80
No. 1	1.70	@	1.80
No. 2	1.50	@	1.60
No. 3	1.30	@	1.40
No. 4	1.25	@	1.35
No. 5A	.90	@	1.00

Foreign Rags
New Rags

New Dark Cuttings	2.50	@	3.00
New Mixed Cuttings	2.75	@	3.25
New Light Silesias	7.00	@	7.50
Light Flannelettes	7.50	@	8.00
Unbleached Cuttings	10.00	@	11.00
New White Cuttings	10.00	@	10.50
New Light Oxfords	7.00	@	7.50
New Light Prints	5.50	@	6.50

Old Rags

No. 1 White Linens	7.25	@	8.00
No. 2 White Linens	5.75	@	6.75
No. 3 White Linens	4.75	@	5.25
No. 4 White Linens	3.00	@	3.50
No. 1 White Cotton	5.50	@	6.50
No. 2 White Cotton	4.50	@	5.50
No. 3 White Cotton	3.00	@	4.00
No. 4 White Cotton	2.00	@	2.10
Extra Light Prints	2.75	@	3.25
Ord. Light Prints	2.25	@	2.50
Med. Light Prints	1.95	@	2.10
Dutch Blue Cottons	2.20	@	2.35
French Blue Linens	2.75	@	2.85
German Blue Linens	2.35	@	2.55
German Blue Cottons	2.10	@	2.20
Checks and Blues	1.85	@	2.00
Lindsay Garments	1.85	@	1.95
Dark Cottons	1.45	@	1.50
Old Shopperies	1.40	@	1.45
New Shopperies	1.35	@	1.40
French Blues	2.10	@	2.25

Old Rope and Bagging
(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.60	@	1.70
Wool Tares, light	1.60	@	1.65
Wool Tares, Heavy	1.60	@	1.70
Bright Bagging	1.60	@	1.70
Small Mixed Rope	1.25	@	1.40
Manila Rope—			
Foreign	4.25	@	4.40
Domestic	4.25	@	4.50
New Burlap Cut	2.75	@	3.00
Hessian Jute Threads—			
Foreign	3.50	@	4.00
Domestic	3.25	@	3.50

Old Waste Papers
(F. o. b. New York)

Shavings—			
Hard, white, No. 1	3.00	@	3.25
Hard, white, No. 2	2.40	@	2.55
Soft, white, No. 1	2.55	@	2.65
White envelope cuttings	2.90	@	3.10
Flat Stock—			
Stitchless	1.45	@	1.55
Overissue Mag.	1.45	@	1.55
Solid Flat Book	1.40	@	1.50
Crumpled No. 1	1.00	@	1.10
Solid Book Ledger	2.00	@	2.10
Ledger Stock	1.40	@	1.50
New B. B. Chips	.45	@	.55
Manilas—			
New Env. Cut	2.40	@	2.60
New Cuttings	1.50	@	1.75
Extra No. 1 old	1.25	@	1.35
Print	.60	@	.65
Container	.40	@	.50
Bogus Wrapper	.60	@	.65
Old Kraft Machine Compressed bales	1.65	@	1.75
News—			
No. 1 White News	1.65	@	1.75
Strictly Overissue	.55	@	.65
Strictly Folded	.45	@	.55
No. 1 Mixed Paper	.25	@	.30
Common Paper	.15	@	.20

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EDGAR CLAYS ARE THE RESULT OF ALMOST A HALF CENTURY OF EXPERIENCE IN WASHING CLAYS.

TECHNICAL SERVICE AVAILABLE BOTH FOR COATING AND LOADING WITHOUT CHARGE.

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EDGAR BROS. CO.

50 Church St. Hudson Terminal Bdg.
New York City

Twines
(F. o. b. Mill)

Cotton—			
No. 1	.39	@	.40
No. 2	.37	@	.38
No. 3	.36	@	.37
B. C., 18 basis	.38	@	.40
A. B. Italian, 18 basis	.48	@	.53
Finished Jute—			
Dark 18 basis	.24	@	.25
Light 18 basis	.27	@	.28
Jute Wrapping, 3-6 Ply—			
No. 1	.19	@	.21
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.16	@	.17
Fine Tube Yarn—			
5-ply and larger	.21	@	.25
4-ply	.25	@	.29
3-ply	.28	@	.32
Unfinished India—			
Basis	.13	@	.14
Paper Makers Twine			
Balls	.11	@	.12
Box Twine, 2-3 ply	.15	@	.17
Jute Rope	.17	@	.19
Amer. Hemp, 6	.29	@	.31
Sisal Hay Rope—			
No. 1 Basis	.16	@	.18
No. 2 Basis	.14	@	.16
Sisal Lath Yarn—			
No. 1	.14	@	.16
No. 2	.12	@	.14
Manila Rope	.22	@	.24

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.30	@	.53½
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.06¾	@	.11
Superfine writing	.18	@	.24
No. 1 fine writing	.14	@	.18
No. 2 fine writing	.12	@	.14
No. 3 fine writing	.08½	@	.12
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.04	@	.04½
No. 1 Kraft	.06¼	@	.06½
Southern Kraft	4.25	@	4.50
No. 2 Kraft	.04	@	.04¼
Wood Tag Boards	.04¼	@	.06¾
Sulphite Screenings	.03	@	.03¼
Manila Tissue—			
24x36 Sheet	.07	@	.07¼
White Tissue—			
20x30 Sheet	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	62.00	@	—
Sheets	67.00	@	—
Boards, per ton—			
Plain Chip	37.50	@	42.50
Solid News	47.50	@	—
Solid News	40.00	@	45.00
Manila Lined Chip	50.00	@	55.00
Container Lined—			
85 Test	65.00	@	70.00
100 Test	70.00	@	—

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 Hard White	2.35	@	2.40
White Env. Cuttings	2.60	@	2.65
No. 1 Soft Shavings	2.10	@	2.15
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.50	@	.60
Ledger & Writings	1.25	@	1.35
Solid Books	1.05	@	1.10
Blanks	1.60	@	1.65
Krafts	1.65	@	1.75
New Kraft Cuts	2.15	@	2.25
Manila Envelope Cuttings	1.75	@	1.80
Ex. No. 1 Manila	1.30	@	1.45
Print Manila	.60	@	.70
Folded News (overissue	.50	@	.60
Old Newspapers—			
No. 1	.60	@	.65
No. 2	.50	@	.55
Mixed Papers—			
No. 1	.45	@	.50
Roofing Stocks—			
(F. o. b. Chicago, net cash)			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.05	@	.40
Ledgers	.08	@	.40
Writings—			
Superfine	.12½	@	.18
Extra fine	.18	@	.22
Fine	.17	@	.26
Fine, No. 2	.15	@	.25
Fine, No. 3	.09	@	.20
Book, M. F.	.05	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.09	@	.16
Coated Lithograph	.07	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.07	@	.09
Manila Sul., No. 1	.04	@	.05½
Manila No. 2	.03	@	.04
No. 2 Kraft	.03¾	@	.05½
No. 1 Kraft	.05½	@	.06½
Common Bogus	.03½	@	.04
(Delivered Philadelphia)			
News Print Rolls	62.00	@	—
Straw Board	52.50	@	70.00
News Board	37.50	@	38.50
Chip Board	32.50	@	35.00
Wood Pulp Board	85.00	@	95.00
Binder Boards—			
No. 1, per ton	75.00		
No. 2, per ton	70.00		
Carload lots	68.00	@	70.00
Tarred Felts—			
Regular	55.50	@	57.00
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.10½	@	.11
New White, No. 2	.07	@	.07½
Light Silesias	.07	@	.07½
Silesias, No. 1	.07	@	.09
Black Silesia, soft.	.05	@	.05½
New Unbleached	.10½	@	.11
Washable, No. 1	.04½	@	.05
Blue Overall	.07½	@	.08
Cottons—According to grades—			
Washable, No. 2	.03	@	—
New Blue	.03	@	.03¼
Fancy	.03½	@	.06
New Black Soft	.05	@	.05¼
New Light Seconds	.02½	@	.03
New Dark Seconds	1.85	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.05½	@	.05¾
No. 2 Mixed	.04½	@	.04¾
Corduroy	.03	@	.03½
New Canvas	.08½	@	.09
New Black Mixed	.03¾	@	.04½

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.50	@	1.60
Domestic	1.75	@	—
Manila Rope	3.50	@	4.00
Sisal Rope	1.50	@	—
Mixed Rope	1.10	@	1.25
Scrap Burlaps—			
No. 1	1.50	@	1.60
No. 2	1.10	@	1.20
Wool Tares, heavy	3.00	@	—
Mixed Strings	1.15	@	1.25
No. 1, New Light Burlap	2.50	@	2.75
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.65	@	2.75
No. 2 Hard White	2.30	@	2.50
No. 1 Soft White	2.25	@	2.50
No. 2 Soft White	1.40	@	1.60
No. 1 Mixed	1.40	@	1.50
No. 2 Mixed	.80	@	.90
Solid Ledger Stock	1.55	@	1.65
Writing Paper	1.00	@	1.15
No. 1 Books, heavy	1.15	@	1.20
No. 2 Books, light	.90	@	.100
No. 1 New Manila	2.30	@	2.50
No. 1 Old Manila	1.50	@	1.60
Print Manila	.40	@	.50
Container Manila	.30	@	.35
Old Kraft	1.40	@	1.50
Common Paper	.15	@	.20
No. 1 Mixed Paper	.15	@	.20
Straw Board, Chip	.35	@	.40
Binders Board, Chip	.35	@	.45
Overissue News	.40	@	.45
Old Newspaper	.25	@	.30

Domestic Rags (Old)

White, No. 1—			
Repacked	4.25	@	4.50
Miscellaneous	3.50	@	3.75
M. G.	7.00	@	—
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.60	@	1.80
Black Stockings (Export)	3.90	@	4.25
Roofing Stock—			
Foreign No. 1	1.65	@	1.75

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.07½	@	.12½
Rag content	.15	@	.30
All rag	.38	@	.52½
Bonds—			
Sulphite	.06½	@	.11½
Rag content	.15	@	.30
All rag	.36½	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.03¾	@	.05
Common Bogus	.02	@	.02¾
Delivered New England points			
News Print Rolls	61.50	@	—
Straw Boards, rolls .009			52.50
Straw Board in Sheets, basis 35s to 70s	54.50	@	55.00
Filled News Board	37.50	@	40.00
Chip Board	35.00	@	37.50
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated Newsboard Bender	65.00	@	80.00
Wood Pulp Board	75.00	@	80.00
Binder Boards	70.00	@	75.00
(F. o. b. Mill)			
Tarred Felts—			
Regular, carload lots	65.00	@	—

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.25	@	3.75
No. 2 Hard White	2.60	@	2.90
No. 1 Soft White	2.40	@	2.50
No. 1 Mixed	1.10	@	1.15
No. 2 Mixed	.85	@	.90
Solid Ledger Stock	—	@	2.25
No. 1 Books, Heavy	1.50	@	1.55
No. 1 Books, Light	—	@	1.15
Manila Env. Cuttings	2.00	@	2.25
No. 1 Old Manila	.90	@	1.00
White Blank News	1.60	@	1.70
Old Kraft	—	@	1.50
Print Manila	.80	@	.90
No. 1 Mixed Paper	.20	@	.25
Overissue News	.45	@	.55
Old Newspapers	.45	@	.50
Box Board, Chip	.45	@	.50
Corrugated Papers	—	@	.35
Repacked	.01½	@	.01¾
No. 2	1.20	@	1.25
No. 3 (Roofing)	1.10	@	1.20
No. 4	1.00	@	1.15
No. 5A	.75	@	.80
B	.65	@	.75
C	.65	@	.75

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.40	@	1.55
Manila Rope—			
Foreign	—	@	4.25
Domestic	—	@	4.50
Transmission Rope	2.25	@	2.50
Mixed Strings	.85	@	.95
Jute Wool Strings	1.00	@	1.05
Jute Carpet Threads	1.05	@	1.15
Scrap Burlaps	—	@	1.35
Scrap Sisal	1.55	@	1.65
Scrap Sisal for shredding	1.75	@	2.00
Wool Tares, heavy	1.60	@	—
New Burlap Cutting	1.75	@	2.00
Australian Wool Pouches	2.50	@	3.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New White No. 1	.08½	@	—
Silesias, No. 1	.06	@	.06¼
New Unbleached	.09¾	@	—
Fancy	.04	@	.04½
Washable	.04	@	.04½
Cottons—According to grades			
Blue Overalls	.06¼	@	.06¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.05	@	—
Corduroy	.03	@	.03¼
New Canvas	.08	@	.08½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	4.75	@	5.25
Miscellaneous	5.00	@	—
White No. 2—			
Repacked	.04½	@	.05
Miscellaneous	.03½	@	.04
Twos and Blues	2.75	@	3.00
Thirds and Blues—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	1.90
Black Stockings	—	@	4.00
Roofing Stock—			
No. 1	1.65	@	1.75
No. 2	1.40	@	1.50
No. 3	1.05	@	1.10
No. 4	1.10	@	1.15

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.40	@	1.45
New No. 1 Shirt Cuttings	9.00	@	9.50
Dutch Blues	2.00	@	2.12½
Lace Curtains	4.50	@	4.75
New Checks & Blues	4.25	@	4.60
Old Fustians	1.90	@	2.00
Old Linsey Garments	1.80	@	1.85

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.12½	@	—
No. 2 Sulphite	.10¾	@	—
No. 1 Colored	.13½	@	—
No. 2 Colored	.11¾	@	—
Ledgers (sulphite)	—	@	—
Ledgers, No. 1	.36	@	—
Ledgers, No. 2	.27	@	—
Writing	.09½	@	.10
Book—			
No. 1 M. F. (carloads)	7.50	@	—
No. 2 M. F. (carloads)	7.25	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.00	@	—
No. 2 S. C. (carloads)	7.75	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and Litho	13.25	@	—
No. 2 Coated and Litho	12.25	@	—
No. 3 Coated and Litho	11.50	@	—
Coated tinted	14.50	@	—
Wrapping—			
Rag Brown	4.95	@	—
White Wrap	5.25	@	—
"B" Manila	5.80	@	—
No. 1 Manila	6.65	@	—
Fiber	6.65	@	—
Kraft, M. F.	7.00	@	—
White, No. 2	2.00	@	2.25

(Delivered Toronto)

News, per ton—			
Rolls (contract)	61.50	@	62.00
Sheets	67.00	@	—

Pulp
(F. o. b. Mill)

Ground Wood	31.00	@	32.00
Sulphite easy bleaching	60.00	@	—
Sulphite news grade	60.00	@	—
Sulphite, bleached	77.00	@	78.00
Sulphate	60.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	3.00	@	—
Soft White Book Shavings	2.85	@	—
White Blk. News	1.60	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.40	@	—
Light and Crumpled Book Stock	1.25	@	—
Ledgers and Writings	1.50	@	—
Solid Ledgers	1.50	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	1.00	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.85	@	—
Strictly Folded	.85	@	—
No. 1 Mixed Paper	.65	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09¼	@	.10
Fancy Shirt Cuttings	.06	@	.06½

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PAPER TRADE JOURNAL

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